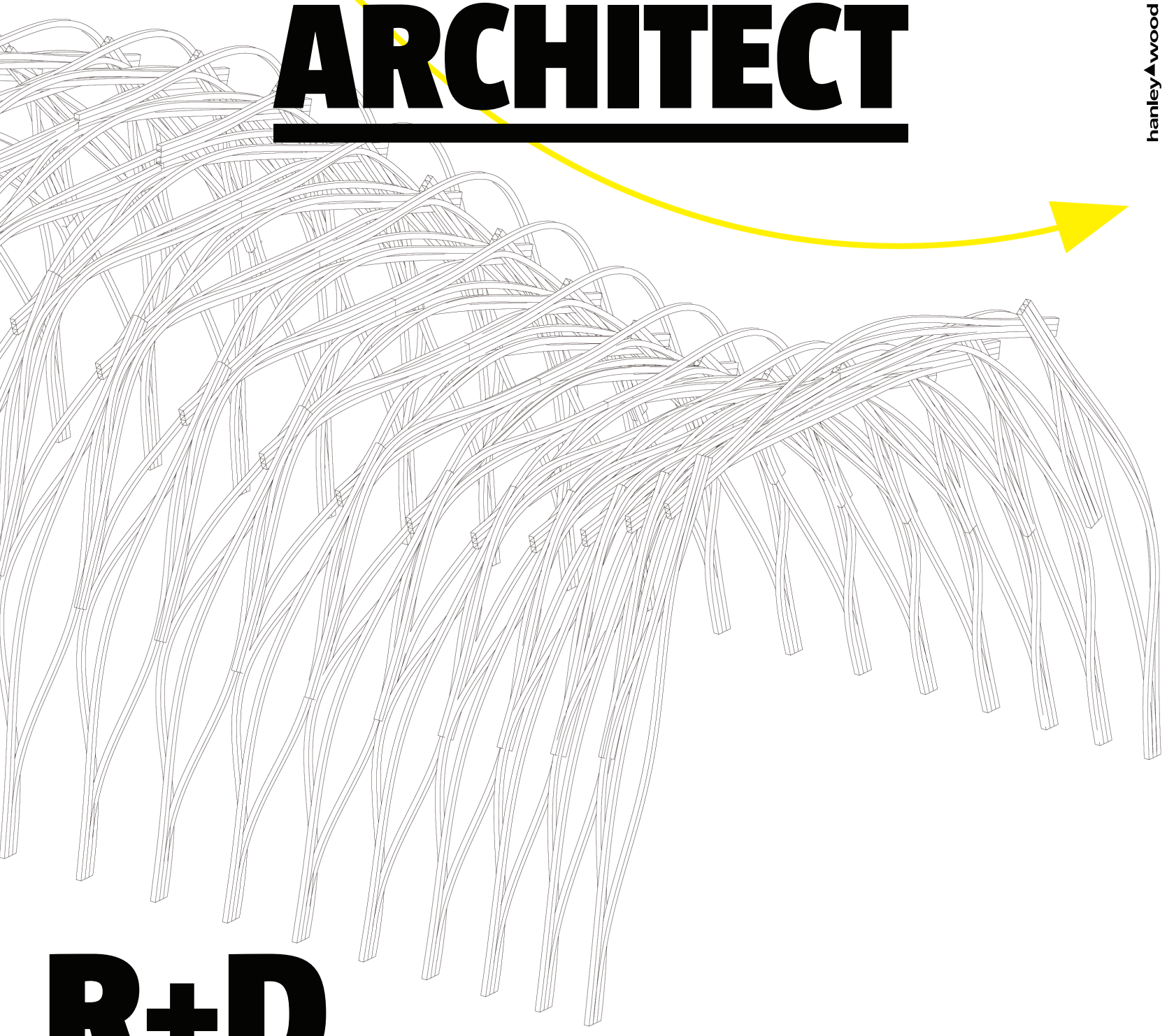
Archigram Online 48 **Cloudy, With a Chance of Computing** 28
From Unemployed to Entrepreneur 15 **Shigeru Ban's Pompidou** 43

ARCHITECT

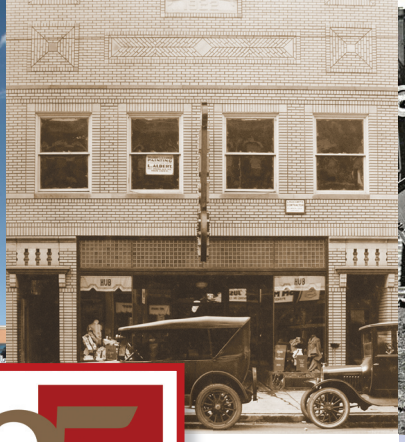
hanley▲wood



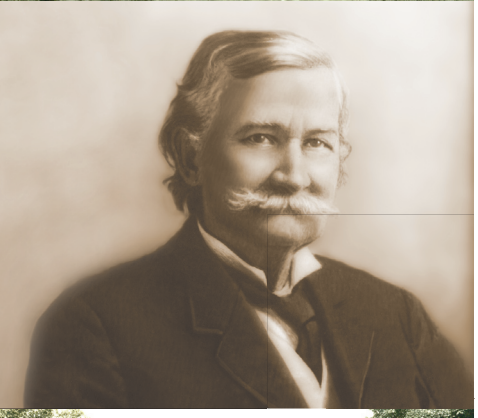
R+D

STEAM-BENDING, DECARBONIZATION, AND RUBBER SINKS—**THE PRECISE ALCHEMY OF BUILDING TECHNOLOGY**






125 YEARS
1885-2010




AN INCREDIBLE LEGACY.

The Belden Brick company has a reputation of quality, enhanced by the incredible palette they offer: 250 colors, 20 sizes, 13 textures. Face brick, thin brick, pavers, special shapes, and the ability to create custom shapes and pieces for dramatic brick sculptures. All in a product line that lets your imagination soar. So trust your design to the company that sets the standard of quality for the brick industry.






BELDEN
THE BELDEN BRICK COMPANY

"The Standard of Comparison Since 1885"

Canton, Ohio / (330) 456-0031 / www.beldenbrick.com

An ISO 9001:2008 Registered Quality Management System

Circle no. 82 or http://architect.hotims.com






ARCAT BIM
Objects, Systems, Materials



This object, plus hundreds more, have all been developed by ARCAT BIM experts, so you can rely on them as you do for ARCAT specs and SpecWizards. These 3D objects are packed with all the critical product data you need, and are free of charge like all of ARCAT services!

"We put the info in BIM"

BIM INFO®

www.arcat.com

Circle no. 430 or http://architect.hotims.com







Grasspave2 porous paving has the beauty you want, the strength you need, and the environmental benefits your clients demand. Grasspave2 has 100% real grass coverage for a beautiful look and 5,721 psi compressive strength for fire lanes, truck access, and parking lots. Grasspave2 mitigates the urban heat island effect, filters pollutants, recharges groundwater, allows tree growth, and comes from 100% recycled plastic.

invisiblestructures.com
800-233-1510

Invisible Structures, Inc.

Circle no. 400 or http://architect.hotims.com

ARCHITECT

Editorial

EDITOR-IN-CHIEF
EDITORIAL DIRECTOR, COMMERCIAL DESIGN
Ned Cramer
ncramer@hanleywood.com

MANAGING EDITOR
Greig O'Brien
gobrien@hanleywood.com

SENIOR ART DIRECTOR
Aubrey Altmann
aaltmann@hanleywood.com

EXECUTIVE EDITOR
Amanda Kolson Hurley
ahurley@hanleywood.com

SENIOR EDITOR, BUILDINGS
Katie Gerfen
kgerfen@hanleywood.com

SENIOR EDITOR, DEPARTMENTS & ONLINE
Braulio Agnese
bagnese@hanleywood.com

ASSOCIATE ART DIRECTOR
Marcy Ryan
mryan@hanleywood.com

SENIOR EDITOR, PRODUCTS
Laurie Grant
lgrant@hanleywood.com

ASSISTANT MANAGING EDITOR
Lindsey M. Roberts
lmroberts@hanleywood.com

EDITORIAL INTERNS
Peter James, Alexandra Lopez

ART INTERNS
Maggie Goldstone, Kim Lofgren

EDITORS-AT-LARGE
Edward Keegan, Vernon Mays

CONTRIBUTING EDITORS
Aaron Betsky, Blaine Brownell, Elizabeth Evitts Dickinson, John Morris Dixon, Thomas Fisher, Cathy Lang Ho, Lance Hosey, Margot Carmichael Lester, Mimi Zeiger

CONTRIBUTING ARTISTS
Ian Allen, Peter Arkle, Catalogtree, Noah Kalina, Mike Morgan

Online

GENERAL MANAGER, ONLINE
Kim Heneghan

CHIEF DESIGNER
Thomas C. Scala

SENIOR WEB PRODUCER
Richard Stirba

Services

EDITORIAL AND ADVERTISING OFFICES
One Thomas Circle, NW, Suite 600
Washington, DC 20005
Phone: 202.452.0800
Fax: 202.785.1974

SUBSCRIPTION INQUIRIES, CUSTOMER SERVICE, AND BACK-ISSUE ORDERS
E-mail *arch@omeda.com*, or call 888.269.8410 (toll-free in USA) or 847.291.5221.
Visit *architectmagazine.com* and click on "Subscribe" (subscriptions only).
Allow six to eight weeks for delivery of first issue.

ANNUAL SUBSCRIPTION RATES
USA: $59; Canada: $69
Other countries: $199
(12 monthly issues)

SINGLE-COPY PRICES
USA: $10; Canada: $15;
Other countries: $20

ADDRESS CHANGES
ARCHITECT
P.O. Box 3494
Northbrook, IL 60065-9831

REPRINTS
Wright's Reprints
sales@wrightsreprints.com
877.652.5295

MEDIA KITS
architectmediakit.com

LETTERS TO THE EDITOR
Please e-mail *ncramer@hanleywood.com*. (Letters may be edited for length, content, grammar, and style.)

PRODUCT SUBMISSIONS
Please e-mail a press release and image to *products@architectmagazine.com*.

PROJECT SUBMISSIONS
Please e-mail photographs, drawings, and a brief written description to *kgerfen@hanleywood.com*.

NEWSLETTERS
ARCHITECT magazine produces two free e-mail newsletters: the daily **ARCHITECT Newswire** and the **ARCHITECT Weekly**. Subscribe at *architectmagazine.com*.

CONTINUING EDUCATION
To register for our free courses, please visit *architectmagazine.com* or *hanleywooduniversity.com*.

Volume 99, number 8. August 2010. ARCHITECT® (ISSN 0746-0554; USPS 009-880) is published monthly plus an annual product guide by Hanley Wood, LLC, One Thomas Circle, NW, Suite 600, Washington, DC 20005.

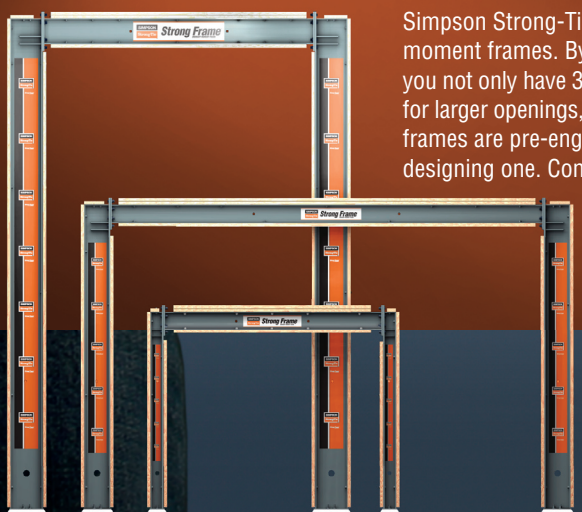
Copyright 2010 by Hanley Wood, LLC. Reproduction in whole or in part prohibited without written authorization. All rights reserved. Printed in the USA.

Periodicals postage paid at Washington, DC, and at additional mailing offices.
POSTMASTER: Send address changes to ARCHITECT, P.O. Box 3494, Northbrook, IL 60065-9831.

Canada Post Registration #40612608/G.S.T. number: R-120931738. Canadian return address: Pitney Bowes Inc., P.O. Box 25542, London, ON N6C 6B2.

hanley wood

EXPAND your frame of reference.



Simpson Strong-Tie has nearly doubled its offering of Strong Frame™ ordinary moment frames. By adding a new 16' tall column and 14', 18' and 20' wide beams, you not only have 368 frame configurations to choose from, but more design flexibility for larger openings, wider interior clear spans and retrofit solutions. And because our frames are pre-engineered, you spend minutes choosing a frame rather than hours designing one. Contractors also appreciate our weld-free, 100% bolted installation.

Expand your options even further with a Custom Strong Frame™ made to order. And download our new Strong Frame Selector software and catalog. For more information visit **www.strongtie.com/strongframe** or call (800) 999-5099.

SIMPSON Strong-Tie®

Circle no. 182 or http://architect.hotims.com

Code Listed (IAPMO ES ER-164)

©2010 Simpson Strong-Tie Company Inc. SF10-A

Just like your favorite pair of jeans...



A Certi-label™ cedar roof never goes out of style.



Isn't it time you chose Certi?

www.cedarbureau.org
info@cedarbureau.com
604-820-7700

Cedar Shake & Shingle Bureau®



Brindisi & Yaroscak Custom Builders, Inc.
Architect: Bartels Pagliaro Architects
Photo: Olson Photographic

Circle no. 280 or http://architect.hotims.com

ARCHITECT

Advertising

EXECUTIVE DIRECTOR, COMMERCIAL DESIGN AND CONSTRUCTION
Patrick J. Carroll
pcarroll@hanleywood.com
773.824.2411

PUBLISHER, COMMERCIAL DESIGN
Russell S. Ellis
rellis@hanleywood.com
202.736.3310

REGIONAL SALES MANAGER, EAST, TX, OK, AR, LA
Michael Lesko
mlesko@hanleywood.com
203.445.1484

REGIONAL SALES MANAGER, MID-ATLANTIC, MI
Nick Hayman
nhayman@hanleywood.com
202.736.3457

REGIONAL SALES MANAGER, WEST
Mark Weinstein
mweinstein@hanleywood.com
562.598.5650

REGIONAL SALES MANAGER, MIDWEST
Michael Gilbert
mgilbert@hanleywood.com
773.824.2435

NATIONAL ADVERTISING MANAGER, LIGHTING
Cliff Smith
csmith@hanleywood.com
864.642.9598

REGIONAL SALES MANAGER, NEW ENGLAND, GA, FL, IN, OH, MS, AL
Dan Colunio
dcolunio@hanleywood.com
617.304.7297

REGIONAL SALES MANAGER, CANADA
D. John Magner
jmagner@yorkmedia.net
416.598.0101, ext. 220

ACCOUNT MANAGER, CANADA
Colleen T. Curran
ctcurran@yorkmedia.net
416.598.0101, ext. 230

REGIONAL SALES MANAGER, UNITED KINGDOM/EUROPE
Stuart Smith
stuart.smith@ssm.co.uk
44.020.8464.5577

GROUP PUBLISHING SUPPORT MANAGER
Angie Harris
aharris@hanleywood.com
773.824.2415

MARKETING MANAGER
Lauren Cardinet
lauren@decisioncounsel.com

RESOURCE AND CLASSIFIED SALES ACCOUNT MANAGER
Erin Liddell
eliddell@hanleywood.com
773.824.2445

Production

DIRECTOR OF PRODUCTION AND PRODUCTION TECHNOLOGIES
Cathy Underwood

PRODUCTION MANAGER
Paige Hirsch

AD TRAFFIC MANAGER
Lauren Dobos

PREPRESS MANAGER
Fred Weisskopf

PREPRESS COORDINATOR
Betty Kerwin

Hanley Wood Business Media

PRESIDENT/HANLEY WOOD
Peter M. Goldstone
202.736.3304

PRESIDENT, MARKET INTELLIGENCE/E-MEDIA
Andy Reid

PRESIDENT, EXHIBITIONS
Rick McConnell

DIRECTOR OF FINANCE
Ron Kraft

VICE PRESIDENT, CIRCULATION AND DATABASE DEVELOPMENT
Nick Cavnar

GENERAL MANAGER, CUSTOM SOLUTIONS
Jennifer Pearce

VICE PRESIDENT, PRODUCTION
Nick Elsener

EXECUTIVE DIRECTOR, E-MEDIA
Andreas Schmidt

VICE PRESIDENT, MARKETING
Sheila Harris

SENIOR DIRECTOR, HUMAN RESOURCES
Curtis Hine

DIRECTOR, CONFERENCES & EVENTS
Stacey Chattman

DIRECTOR, INSIDE SALES
Janet Allen

Hanley Wood, LLC

CHIEF EXECUTIVE OFFICER
Frank Anton

CHIEF FINANCIAL OFFICER
Matthew Flynn

SENIOR VICE PRESIDENT, CORPORATE SALES
Paul Tourbaf

VICE PRESIDENT, FINANCE
Brad Lough

VICE PRESIDENT, GENERAL COUNSEL
Mike Bender

VICE PRESIDENT, CORPORATE DEVELOPMENT
Joe Carroll

DISCLOSURE ARCHITECT® will occasionally write about companies in which its parent organization, Hanley Wood, LLC, has an investment interest. When it does, the magazine will fully disclose that relationship.

PRIVACY OF MAILING LIST Sometimes we share our subscriber mailing list with reputable companies we think you'll find interesting. However, if you do not wish to be included, please call us at 888.269.8410.

All Rights Reserved © Stewart Filmscreen 2010



CNN Communication Center, New York, NY
Custom Curved AeroPlex Screen: 7'9" x 24'
Systems Integrator: McCann Systems, LLC.

Building Solutions

Only Stewart Filmscreen had the right solution with its custom aspect ratio 24-foot curved screen

News broadcasting has always required state-of-the-art technology to bring stories from around the world into our living rooms. When CNN was designing the new Communications Center in the Time Warner Building in the heart of New York City, they wanted to use a large video screen to serve as the back drop for popular programming including *American Morning* and *CNN Election Center.*

Only Stewart Filmscreen had the right solution with its custom aspect ratio 24-foot curved screen. After rigorous testing by AV specialists that studied color and resolution using studio lighting and cameras, it was the Stewart screen that offered the best performance, features, and flexibility.

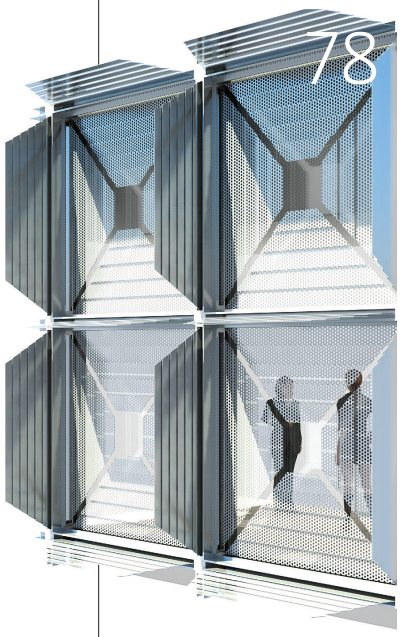
There is no project too large or too impossible for Stewart Filmscreen. Even though we are an innovative projection screen manufacturer, our strength is in the development of optimized, breakthrough solutions that bring your commercial projects to life. Our qualified staff of professional engineers works with designers, architects, contractors and systems integrators to seamlessly integrate technology in the creation of the most unforgettable commercial, entertainment, and demonstration spaces.

For additional information on Stewart Filmscreen:
www.stewartfilmscreen.com
To speak with a representative: www.stewartfilmscreen.com/reps

Circle no. 218 or http://architect.hotims.com

Stewart® FILMSCREEN | COMMERCIAL

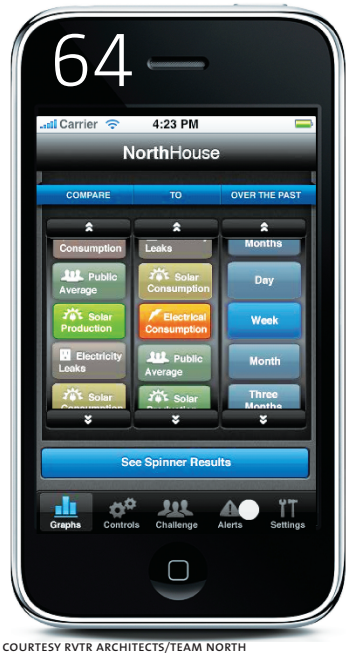
CONTENT



COURTESY SKIDMORE, OWINGS & MERRIILL



COURTESY PLY ARCHITECTURE



COURTESY RVTR ARCHITECTS/TEAM NORTH

FEATURES

50 **The Fourth Annual R+D Awards**

Our jury—Frank Barkow, Cristobal Correa, and Jenny Wu—demanded proof of performance and aesthetics, and evidence of progressive thinking from more than 100 entries. Eleven of them made the cut. KATIE GERFEN, WITH AMANDA KOLSON HURLEY, EDWARD KEEGAN, AND VERNON MAYS

DIGITAL STEAM-BENDING
University of Michigan research teams

R-HOUSE
Della Valle Bernheimer and Architecture Research Office

RUBBiSH (RECYCLED RUBBER SINKS)
Minarc

CHICAGO CENTRAL AREA DECARBONIZATION PLAN
Adrian Smith + Gordon Gill Architecture

NORTH HOUSE
RVTR Architects

GREEN-ZIP TAPE
Green-Zip Tape Partition

SHADOW PAVILION
PLY Architecture

COMMUNITY ROWING BOATHOUSE
Anmahian Winton Architects

BITMAPS
PROJECTiONE

NEW YORK STOCK EXCHANGE SECURITY AND STREETSCAPE
Rogers Marvel Architects

HELIOTRACE FAÇADE SYSTEM
Skidmore, Owings & Merrill



Gideon Fink Shapiro

"Repeating Structural Node,"
Detail page 25

A doctoral candidate in architecture at the University of Pennsylvania, Gideon Fink Shapiro is also a writer and artist whose work has appeared in *Abitare*, *AIArchitect*, *e-Oculus*, *Crit*, *ForYourArt*, *Gothamist*, and *Streetsblog*. Since March, he has written the magazine's Detail department, which, he notes, "looks at how architects are pushing materials to their limits, rethinking structure and surface, and blending human with digital ingenuity." He will take a two-month hiatus from the column this fall.

ON THE COVER
A PARAMETRIC MODEL FROM THE RESEARCH PROCESS FOR DIGITAL STEAM-BENDING. COURTESY UNIVERSITY OF MICHIGAN RESEARCH TEAMS.



© 2010 Technical Glass Products. FireLite is a registered trademark of Nippon Electric Glass Co., Ltd. Now in HD and ultraHD are trademarks of Technical Glass Products. Technical Glass Products, One Source. Many Solutions. and Fireglass are registered trademarks of Technical Glass Products.

FireLite®
Family of Products

The FireLite® family of fire-rated glazing from Technical Glass Products is the definition of high quality. Now, take a closer look at the improvements we've made to surface quality and color. This new ultraHD™ Technology delivers a clearly superior product at a competitive price. Simply put, we've turned up the heat.

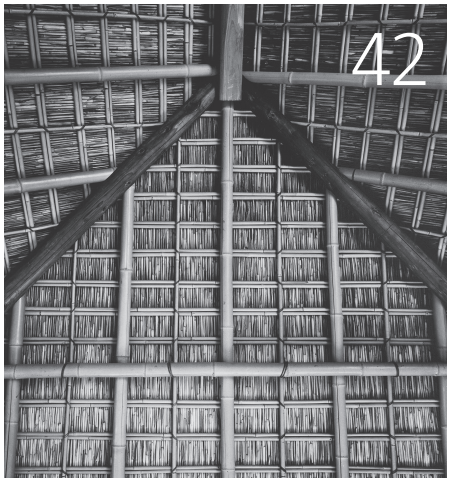
Circle no. 49 or http://architect.hotims.com

TGP FIRE RATED
one source. many solutions.®

SEE THE DIFFERENCE AT
FIREGLASS.COM/HD

ultraHD™ TECHNOLOGY

CONTENT



© ISHIMOTO YASUHIRO



PETER ARKLE

Right Fifty years after appearing in an agenda-driven design book, Ishimoto Yasuhiro's photos of the Katsura Imperial Villa get a second chance.

Far Right "Sustainability" is more than just a boring term used by designers.

FRONT

10 **Dialogue** Friends in High Places

12 **News**

BUSINESS

15 **Best Practices** The Career Reboot
Starting a successful company takes timing, savvy, and connections. EDWARD KEEGAN

18 **Strat** Self-Inflicted Losses
Increased competition for even the smallest projects is leading firms to slash rates. Have things gone too far? ERNEST BECK

23 **Local Market** Charleston, W.Va.
This small city was not devastated by the real-estate collapse. MARGOT CARMICHAEL LESTER

TECHNOLOGY

25 **Detail** Repeating Structural Node
The seeming irregularity of Austria's Mur Tower is really a repeating series of components and nodal geometries. GIDEON FINK SHAPIRO

28 **Computers** In the Clouds
Should your practice move from a local-area network to cloud computing? MIMI ZEIGER

31 **Eco** What's in a Name
Sustainability is more than "design-speak." LANCE HOSEY

32 **A/V** 2010 *Pro AV* Spotlight Awards
Highlights from this year's crop of award-winning A/V designs. BRAD GRIMES

36 **Products** Masonry
An assortment of stone, rock, brick, and retaining walls. LAURIE GRANT

CULTURE

41 **Books, Objects & Exhibits**
Mid-mod textiles from England, considering Charles Rennie Mackintosh, and more ...

43 **Crit** Hat Trick
Can Shigeru Ban's Centre Pompidou-Metz put its home city on the cultural map? CATHY LANG HO

48 **Screen Grab** archigram.westminster.ac.uk
The Archigram Archival Project cues up the '60s pop group's hits and B-sides. MIMI ZEIGER

PAST PROGRESSIVES

88 **1978 and 1980** Shadowy Surrealism
Two Arquitectonica winners have suffered at the hand of Miami's housing boom. THOMAS FISHER

WWW.ARCHITECTMAGAZINE.COM

→ **News, Products, Project Slide Shows, Expert Bloggers & More ...**

Windows® Life without Walls.™ Dell recommends Windows 7.

Let your vision take shape.



Image provided by Autodesk and created with Autodesk Revit software for building information modeling (BIM).

Unleash your creativity and imagine the possibilities. Then watch as they become reality with the power of Dell Precision™ workstations and Autodesk® BIM software.

Dell Precision™ workstations deliver the performance and graphics needed to run demanding applications with ease. Now your team can use data-rich modeling to evaluate new design options, predict building performance and communicate more productively.

- Scalable options – select systems are available with up to 192GB of memory* and 7.5TB of internal storage
- A full range of desktop, rack and mobile workstations to fit your needs
- ISV-certified for 95 leading applications, including Autodesk®
- Stay up and running with a 3-year Limited Hardware Warranty** and optional 24/7 Dell ProSupport™



Get Equipped ▸

Find your ideal configuration online. Go to dell.com/smb/vision or call your sales rep at 1-800-822-3788

Windows 7 Professional

Windows® 7 Professional operating system makes the things you do every day faster and easier. With fewer clicks, faster searching, easier browsing and simpler ways to connect, there's less between you and what you want to do.

*Actual capacity varies with preloaded material and operating environment and may be less. Significant system memory may be used to support graphics, depending on system memory size and other factors. ** For copy of Ltd Hardware Warranty, write Dell USA LP, Attn Warranties, One Dell Way, Round Rock, TX 78682 or visit dell.com/warranty. Remote Diagnosis is determination by online/phone technician of cause of issue, may involve customer access to inside of unit and multiple or extended sessions. If issue is covered by Limited Hardware Warranty and not resolved remotely, technician and/or part will be dispatched usually within 1 business day following completion of Remote Diagnosis. Availability varies. Other conditions apply.

Circle no. 96 or http://architect.hotims.com

FRIENDS IN HIGH PLACES



THE AIA, AND THE PROFESSION, NEEDS A CEO WITH THE SKILLS—AND THE MANDATE—TO ENACT CHANGE.

IT'S SAFE TO ASSUME, because I live on Capitol Hill in Washington, D.C., that I spend lots of free time chatting about politics with folks who actually make policy. I've gotten to know a fair number of neighbors since moving here last year—my dog, Mortimer, is *very* social—but surprisingly few, if any, actually work for the government.

Just off the top of my head, I can think of meeting a rare-book dealer, a carpenter, and a veterinarian, but I have yet to cross paths with a real, live congressional staffer or White House aide. I'm beginning to think politicos operate in closed communities, like bumblebees: too busy to socialize outside the hive.

It's a shame, my lack of acquaintances in government, because every day, decisions get made in Washington that affect architects around the country. Such decisions take on added weight given the troubled state of the economy. A potential tax increase on S corporations? The solicitation process for GSA projects? These things matter.

Before moving to the Hill, I had developed this mild Woodward-and-Bernstein fantasy, in which I tapped neighborly insiders for leads about emerging legislation and policy initiatives relating to the built environment—leads that could evolve into great articles of great service to architecture. Trade publications in other industries cover the Beltway beat like hawks. Why not ARCHITECT?

Fortunately, the profession doesn't lack allies, just because Mortimer failed to break me into the right crowd on Capitol Hill. Power players such as Rep. Earl Blumenauer and HUD secretary Shaun Donovan sit firmly in architecture's camp. The big question is how the profession can parlay such relationships into positive action. That's where the AIA enters the picture.

As has been widely reported, AIA executive vice president and CEO Christine McEntee resigned earlier this summer to become executive director of the American Geophysical Union. The search for her successor deserves every architect's close attention. In this issue of ARCHITECT (page 13), AIA president George Miller tells editor-at-large Edward Keegan about the selection process and some of the qualities that the search committee is looking for in a new CEO. I hope people skills are high on the list, because in the coming months and years, the profession will continue to need a leader who can build lasting friendships in high places.

"Wait," you may think, "isn't it the AIA president's job to lobby on behalf of the profession?" Certainly, one of the president's most important roles is to serve as a voice for architecture, notably in Washington. Since the AIA has a different president every year, the position requires a strong partner and facilitator—a CEO who will ensure the continuity of external relationships and the persistence of institutional vision.

There's too much at stake right now to settle for a CEO who excels at pushing paper. The AIA, and the profession, needs a CEO with the skills—and the mandate—to enact change. In my opinion, the board might consider dropping "executive vice president" from the job title; it sends a mixed message about the authority of the position.

I'm counting on our new relationship with the AIA to give ARCHITECT, and therefore architects, the inside track on important policy initiatives—not just here in Washington, but in all 50 states and the local communities where architects work to make a difference. Mortimer's no help; he's more interested in squirrels. But the rest of us have the capacity to be political animals: As the AIA's next CEO and the membership's elected leaders work their magic together, ARCHITECT will be rooting for them—and reporting on their progress.



MIKE MORGAN



Moisture management, acoustics, sustainability, energy efficiency, lifestyle – CertainTeed is the company that brings eco-friendly building system solutions and your green design concepts to life.

As the 2009 and 2010 ENERGY STAR® Partner of the Year, we are proud of our commitment to designing high quality, sustainable building products.

AN ENERGY STAR® IS BORN

COMCAST TOWER, PHILADELPHIA, PA
The Tallest LEED Core and Shell Certified Building in the United States.

ARCHITECTURE AND DESIGN
Robert A.M. Stern Architects, New York

CERTAINTEED BUILDING PRODUCTS
Ceilings, Commercial Insulation & HVAC Insulation

ENERGY STAR AWARD 2010
PARTNER OF THE YEAR

800-233-8990 • certainteed.com http://blog.certainteed.com

ROOFING • SIDING • TRIM • WINDOWS • DECKING • RAILING • FENCE
INSULATION • GYPSUM • CEILINGS • FOUNDATIONS • PIPE

Circle no. 242 or http://architect.hotims.com

CertainTeed
SAINT-GOBAIN

EDITED BY BRAULIO AGNESE

Top Stories → For these stories and more, see architectmagazine.com.

NEWSWIRE

COMPILED BY EDWARD KEEGAN

RETAIL TRAFFIC

Malls for the 21st century

Elaine Misonzhnik reports that the regional mall is staging a comeback in hard times. These supposed dinosaurs had a vacancy rate of 6 percent in the first quarter of the year—better than specialty centers and the overall U.S. retail market. The most common renovations add offices, apartments, and public spaces.

SAN JOSE MERCURY NEWS

Suicide net planned for Golden Gate Bridge

On July 28, $5 million in federal funds was approved to design a suicide barrier for the Golden Gate Bridge. "Bridge officials approved in February plans to hang a stainless steel net about 20 feet below the world-famous span," The Associated Press reports.

THE STAR-LEDGER (NJ)

Garden State—not so much anymore

Rohan Mascarenhas reports, "For the first time, New Jersey's landscape is covered more by housing and shopping malls rather than forests." This is the conclusion of a study by Rowan and Rutgers universities, which caution that the state could run out of open space by midcentury.

THE MIAMI HERALD

Arquitectonica returns to Coconut Grove

Bernardo Fort-Brescia and his wife, Laurinda Spears, are bringing Arquitectonica back to the location of its original office in Coconut Grove, Fla. Andres Viglucci reports that the new building won't be as zoomy as those that made the firm famous worldwide.

PSFK

"Culture Shed" revealed

Diller Scofidio + Renfro and the Rockwell Group have revealed designs for the "Culture Shed" at New York's Hudson Yards, which will eventually form the terminus of the High Line. PSFK reports that the five-story building will combine museum, performance, and exhibition spaces.

THE CHRISTIAN SCIENCE MONITOR

Changes for Pei-Cossutta complex

The Christian Science Church is noted for its patronage of remarkable buildings, including its Boston headquarters. *The Christian Science Monitor* reports that the church unveiled plans that would add two buildings and change the headquarters' plaza and its 686-foot-long reflecting pool.

FACILITY BLOG

AIA Consensus Construction Forecast: Not so good

The midyear results from the AIA's semiannual survey of leading construction forecasters offer little good news. Nonresidential construction spending is likely to decrease 20 percent this year, and any "recovery" in 2011 will be limited to a tepid 3.1 percent.

→ To subscribe to the ARCHITECT Newswire daily e-mail, simply go to architectmagazine.com and click on "Newsletter."

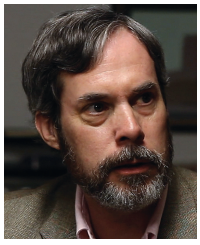
DLR GROUP ACQUIRES KKE ARCHITECTS

OMAHA, NEB.–BASED DLR GROUP has acquired KKE Architects, a firm with offices in Minnesota, California, Nevada, and Arizona, in an effort to grow its U.S. business and to enhance its capabilities in China. DLR will gain four U.S. offices, for a total of 22 in the U.S. and one in Shanghai. In Minneapolis, where both firms are represented, the offices will combine and operate as DLR Group KKE. KKE's offices in Pasadena and Irvine, Calif., and Las Vegas will also take the new name. In Phoenix, however, the combined offices will operate as DLR Group.

Greg Hollenkamp, CEO of KKE, said, "We already cross over in a lot of markets—justice, education, corporate. What [the merger] does is give us the combined resources to really be a premier firm in those markets."

The KKE deal follows DLR's February takeover of WWCOT, a California-based firm that offered the prize of an established office in Shanghai. Griff Davenport, a managing principal at DLR, said, "WWCOT certainly gave us a launching pad in China. KKE brings an additional level of experience and exposure there."

Hollenkamp and KKE president Tom Gerster will become DLR senior principals. Hollenkamp will lead the combined firm's growth strategy for the government, healthcare, Native American, and senior housing markets; Gerster will lead upper Midwest operations and manage the integration of the two firms. PETER JAMES



Alex Wilson Wins 2010 Hanley Award

Green building pioneer Alex Wilson, founder of BuildingGreen, in Brattleboro, Vt., was named this year's recipient of The Hanley Award for Vision and Leadership in Sustainable Housing.

Wilson is probably best known for launching in 1992 the monthly newsletter *Environmental Building News*, which became one of the earliest credible sources of information available about green building products and technology. BuildingGreen is also the publisher of the *GreenSpec Directory* and buildinggreen.com. Over the years Wilson also has served on the boards of the U.S. Green Building Council, the Northeast Sustainable Energy Association, and the Conservation and Research Foundation, and has won national awards for journalism, environmental leadership, and educational outreach.

The Hanley Award, which comes with a $50,000 cash prize, is sponsored by The Hanley Foundation, *EcoHome* magazine, and Hanley Wood. To learn more about the award program and the people involved, go to ecohomemagazine.com. RICK SCHWOLSKY

Snøhetta Tapped to Design SFMOMA Expansion

THE SAN FRANCISCO Museum of Modern Art (SFMOMA) has picked Snøhetta, a 100-member firm with offices in Oslo and New York City, to design a 160,000-square-foot expansion of its distinctive Mario Botta–designed building. In addition to providing new exhibition space, the $250 million expansion will consolidate administrative functions—freeing up room in the existing 225,000-square-foot building for new galleries and public spaces.

SFMOMA has grown dramatically since its move into the Botta building in 1995: Yearly attendance has tripled to 700,000 and the collection has doubled, to 27,000 works. The expansion will replace two small buildings around the corner from the museum, and a bridge or tunnel between the buildings will bypass an alley that must remain open.

This will be Snøhetta's first project on the West Coast, but only the latest in a string of high-profile cultural projects across the world, including the Bibliotheca Alexandrina, in Egypt, and the Oslo Opera House. Current projects include the entrance pavilion to the National September 11 Memorial Museum, now under construction at the World Trade Center site in New York; an arts center at Bowling Green State University, Ohio; and the King Abdulaziz Center for World Culture, in Dhahran, Saudi Arabia.

Craig Dykers, Snøhetta co-principal, said in a statement, "The new extension will unite the Botta design with its dynamic urban surroundings, becoming the tissue that merges building and community, supports the museum's role as an educational and civic catalyst, and opens up the museum to the diverse audiences it serves."

The announcement caps off a five-month selection process. Thirty-five firms were winnowed down to a shortlist of four: Snøhetta, Adjaye Associates, Diller Scofidio + Renfro, and Foster + Partners. The selection committee visited the finalists' offices and toured selected projects—which proved to be the clincher for Snøhetta. SFMOMA director Neal Benezra said in a statement, "The selection committee was particularly thrilled by the stunning spaces, sophisticated use of materials, and quality of light in Snøhetta's Oslo Opera House, which we feel is one of the great buildings worldwide to be designed and built in the last decade."

Snøhetta will partner with a local architectural firm to execute the expansion. Design concepts will be revealed next spring, with the expansion scheduled to open to the public in 2016. P.J.

AIA Searches for a New Chief Executive

THE AIA'S EXECUTIVE VICE PRESIDENT (EVP) and CEO, Christine McEntee, left in July to become executive director of the American Geophysical Union. Upon the announcement of McEntee's impending departure in April, AIA president George Miller began the search for her replacement. ARCHITECT discussed with Miller how the search is progressing.

Until the successful conclusion of the search, Paul Welch Jr., from the AIA California Council, is serving as the interim EVP/CEO. He brings almost 30 years of experience with the largest AIA component in the organization to the task. "It's a very strong appointment," Miller says—although Welch took the interim post with the understanding that he would not be a candidate for the full-time appointment. "He wants to be in California," Miller notes.

Association Strategies, a consultancy that specializes in nonprofit and executive searches, is leading the effort to identify candidates. Miller says, "I suspect they'll have a lot of résumés to sort through."

Miller stresses the strong leadership role the new EVP/CEO will need to take. "They will need to lead the staff and interact with all the components across the nation," Miller says, as well as the president and the national board of directors. Communication skills and political savvy are also critical. "The EVP/CEO is often called on to testify before Congress on short notice," Miller says.

Of course, the recession has sidelined a lot of talent within the profession. Miller estimates that the percentage of unemployed architects nationwide runs in the mid-20s—and these idle members could be candidates. "I fully expect a lot of members to apply," Miller says. "I encourage all people who have the qualifications and skill sets to come forward." The deadline for applications is Oct. 1; full qualifications for the position are listed online at the AIA website careercenter.aia.org. EDWARD KEEGAN

JUNE 2010 ARCHITECTURE BILLINGS INDEX



46.0

- **50.6 commercial**
- **45.0 institutional**
- **44.7 mixed practice**
- **46.5 multifamily residential**

SOURCE: AIA



A beautiful door deserves equally beautiful hardware. With the CORBIN RUSSWIN Access 600™ RNE1 and SARGENT Harmony Series locks, even access control can be elegant! These sleek, yet highly secure devices are available with a wide selection of decorative levers in 13 architectural finishes. Pair them with our gorgeous doors and frames for a truly awe-inspiring opening solution.

For additional inspiration, call 877.580.3053 or visit www.thegooddesignstudio.com

ASSA ABLOY

the good design studio

Circle no. 278 or http://architect.hotims.com

ADAMS RITE | CORBIN RUSSWIN | GRAHAM | MAIMAN | McKINNEY | ROCKWOOD | SARGENT

The global leader in door opening solutions

BUSINESS



INTERVIEW BY EDWARD KEEGAN
PHOTO BY MARK PETERMAN

→BEST PRACTICES

The Career Reboot

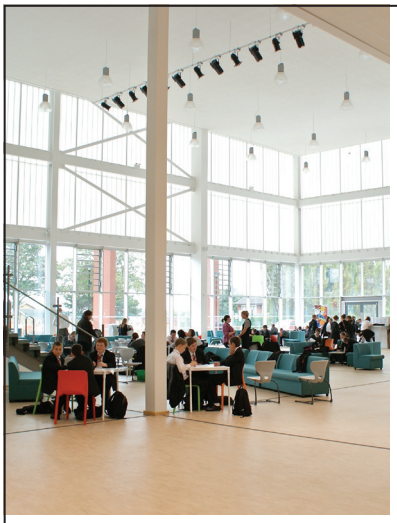
STARTING A COMPANY IS ONE THING. MAKING IT SUCCESSFUL TAKES THE RIGHT COMBINATION OF TIMING, INDUSTRY SAVVY, AND BUSINESS CONNECTIONS.

AFTER BEING LAID OFF by general contractor W.E. O'Neil Construction in late 2008, Allison Suriano went skiing—professionally. The 1987 University of Arizona College of Architecture graduate plotted her comeback from a resort in northern Arizona, where she took a job as a ski instructor during the early days of the Great Recession. Suriano, a licensed architect, had spent most of her career as an owner's representative for school districts in Arizona, working for O'Neil and PinnacleOne (now Arcadis) throughout the 1990s and 2000s. When faced with an abrupt career change, she decided to join up with friends (and former colleagues) John Kennedy and Mark Rafferty, who had launched the development consultancy Kennedy Partners in August 2008. Once there was enough work for all three of them, she joined full-time in January 2009. "I didn't take any pay for the first year," she notes. The Phoenix-based firm now has almost $100 million in projects in the pipeline.

Every start-up needs a helping hand, and Kennedy Partners was no different. "We got free furniture from somebody who was going out of business," says co-founder **Allison Suriano**. And architecture firm DLR Group, a business partner, "went for a long time without sending us a bill."

How did Kennedy Partners get started?
Mark and John are two good friends I met through PinnacleOne. The firm was started with the intent of us

→



Since 1955
Kalwall®
...is the way.

Building with daylight.
- Sustainable/LEED®
- The most highly insulating
- Museum-quality daylight™
- Maintenance-free
- Vandal resistant
- Shatterproof
- DoD, anti-terrorism compliant



...Light-Years Ahead!™

daylightmodeling.com
kalwall.com
skylightinfo.com

Kalwall Corporation
PO Box 237, Manchester, NH 03105
800-258-9777 (N. America)

Circle no. 484 or http://architect.hotims.com

→

being owner representatives for school districts and other public clients. Unfortunately, none of them have any money for capital projects.

How did you deal with that constraint?
One of our school districts asked us, "Why can't I do this solar thing?" We said, "We don't know. Why not?" We spent a lot of time researching, and we found that the mechanisms were in place—exactly at that time—for public entities to do solar-energy projects without spending any money.

How *can* they build without capital expenditures?
We act as the developer—bringing together design, engineering, construction, and finance. We build the solar-energy project on the school site, and because we're a private entity, we can capture federal and state tax credits and utility incentives. The school district pays us for the energy produced until the capital improvement has been paid off. Then the school district owns it.

I'M STILL IN FRONT OF MY CLIENTS, BUT THEY'RE GOING TO REMEMBER ME BECAUSE I WORKED WITH THEM WHEN THEY HAD NO MONEY. ARCHITECTS NEED TO BE THINKING OF WAYS TO GET IN FRONT OF CLIENTS AND HELP THEM OUT.

How long is this process?
It's 15 or 20 years. During the time we own the system, we maintain it, so there's no cost to them. We don't put it on the roof; we shade their parking lots, playgrounds, and eating areas. We've also incorporated educational opportunities—the kids learn what the system is doing.

How much energy does it provide?
We try to produce as much as 90 percent of their power. During the term of the lease, they know what their utility bill will be. When it's the middle of a budget year and you already don't have any money, to have your energy bill go up is really staggering for a school district.

Is that calculation part of your services?
Yes, we work with DLR Group, architects and engineers. They've been our partners in this since the beginning. We look at the site and the incentives available from the utility company, which can vary wildly. If the incentives aren't adequate, the deal isn't financeable for our investors.

How are you hired?
They're all people we know from previous work. It's very organic: We go to the conferences; we play at the same golf outings; we have relationships. They trust us. It's not a solar-panel vendor coming in and putting stuff on their roof. One school district procured us through a statewide cooperative purchasing format called SAVE—Strategic Alliance for Volume Expenditures. Any member of that cooperative can now hire us without a competitive bid. It includes almost every city school district and community college in the state.

How big is Kennedy Partners now?
It's just the three of us. I knew I wanted to do something with Mark and John, but it's not at all where any of us thought we'd be right now.

You're a licensed architect. What value do you bring to—and take from—this kind of work?
It's a compilation of everything, especially knowing how schools use their buildings, the problem areas. We make shade—something we need in Arizona. I'm still in front of my clients, but they're going to remember me because I worked with them when they had no money. Architects need to be thinking of ways to get in front of clients and help them out. □



Cut cooling costs, equipment costs, and carbon emissions with Solarban Low-E glass.

With over a billion square feet of Solarban sold, impossible-sounding LSG ratios may no longer impress you. But the results you'll find with our online energy analysis tool certainly will. For instance, with our leading Solarban glass, your next project could save $400,000 in up-front equipment costs and reduce carbon emissions by 21,000 tons. Find out more at **ppgideascapes.com/SB70XL.**

Solarban, IdeaScapes, PPG and the PPG logo are trademarks owned by PPG Industries, Inc. | Cradle to Cradle Certified℠ is a certification mark of MBDC.

Circle no. 46 or http://architect.hotims.com

SOLARBAN®
SOLAR CONTROL LOW-E GLASS

CERTIFIED cradle to cradle SILVER

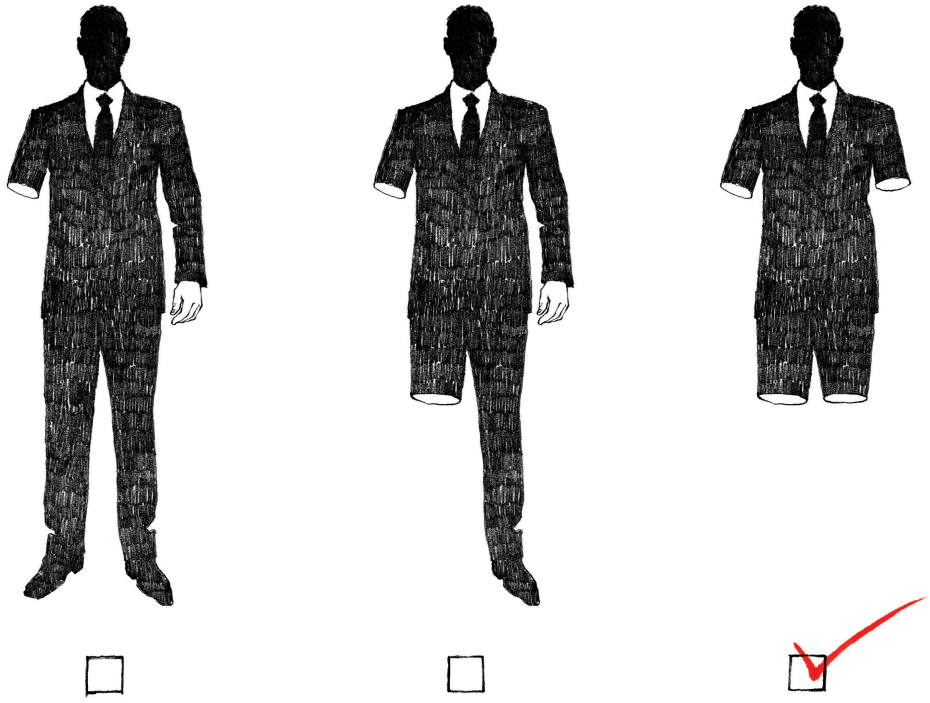
PPG IdeaScapes™
Glass • Coatings • Paint

PPG Industries, Inc., Glass Business & Discovery Center, 400 Guys Run Road, Pittsburgh, PA 15024 www.ppgideascapes.com

→STRATEGY

Self-Inflicted Losses

THE SECOND INSTALLMENT OF OUR SERIES ON ARCHITECTURAL FEES FINDS THAT INCREASED COMPETITION FOR EVEN THE SMALLEST OF PROJECTS IS LEADING FIRMS TO SLASH RATES. BUT HAVE THINGS GONE TOO FAR?



TEXT BY ERNEST BECK
ILLUSTRATION BY LAUREN NASSEF

WHEN A MAJOR New York financial institution asked three architecture firms to submit bids for a high-end office renovation last year, it was a relatively small project, but one that was eagerly sought by the bidders to keep revenue flowing in tough times. What transpired reflects the cutthroat nature of the industry these days: Two firms came in at around $175,000, while the third offered a bargain-basement price of $100,000, according to one of the participants, who asked to remain anonymous to protect client confidentiality.

Not surprisingly, the low bidder won, prompting an angry response from one of the other bidders. "If we went in at $160,000, it would have been low-balling—and dangerously low—but not impossible," says this person, principal of a small New York design boutique that specializes in interior renovations. "But bidding $100,000 is impossible. ... [T]hey won't make any money."

The recession has wreaked havoc on the architecture industry in many ways, from a rollback in projects to staff layoffs to declining revenue. One of the most devastating aftershocks, however, has been the practice of fee-cutting, as firms struggle to survive by meeting client demands to save money and tighten budgets.

While no exact numbers are available, architects say fee-cutting is widespread. Scott Kuehn, partner at Denver-based H+L Architecture, an 85-person firm that specializes in healthcare, education, science, and technology, had one long-term client ask for a 10 percent cut on all future work. This client, Kuehn says, "indicated that economic pressure and uncertainties ... were driving similar requests to all business partners, suppliers, and vendors."

→

Booming is using your Card's Early Pay Discount to open a new retail store.





KRISTEN COX | CHECKPNT.COM | MEMBER SINCE 02

The Plum Card® from American Express OPEN gives Kristen Cox a 1.5% Early Pay Discount OR a Defer Pay Option each month.

From LAN wires to wireless services, Kristen Cox puts all the expenses for her growing company on the Plum Card. It lets her choose each month between getting the 1.5% Early Pay Discount or getting up to 2 months to pay without interest. Kristen chooses the discount each month and gets thousands back for her business. Money that has let her open a new location — without taking on debt.

Start Booming.

1-866-992-PLUM open.com/plum

AMERICAN EXPRESS OPEN

Pay your balance in full within 10 days of the statement closing date and get a 1.5% discount on virtually all purchases made that month. The discount will appear as a credit on the following billing statement. Pay 10% of the balance from new activity on your billing statement plus the entire amount of any previously deferred payment or amounts past due by the "Please Pay By Date" on that statement and you can extend payment on the rest until the closing date of your next billing cycle without penalty. Visit open.com/plum for details. ©2010 American Express Bank, FSB. All rights reserved. P08

Circle no. 234 or http://architect.hotims.com

"CLIENTS ARE SHOPPING THE HELL OUT OF FEES. THEY ARE AWARE THERE IS DESPERATION, AND THEY ARE EXPLOITING IT. SO THEY WILL TALK TO ENDLESS NUMBERS OF ARCHITECTS. ... THEN WE END UP WITH STUPID-LOW NUMBERS."

— NEW YORK CITY ARCHITECT

Kuehn adds that H+L is seeing significant competition and fee-cutting in the Denver metropolitan area and the front range of Colorado. For example, in the healthcare market there, Kuehn says, fees are now in the 8-percent-to-10-percent range, down from the 9 percent to 12 percent possible before 2008. And in education, he adds, fees as a percentage of new construction have fallen to the 4-percent-to-6-percent range, down two percentage points.

Firms are grappling with the issue in a variety of ways. Some are trying to bring fees down by slicing and dicing costs, lowering overhead, or outsourcing various project elements to low-cost providers. "We try to hold the line, but did adjust some top rates down a bit," Kuehn says. "We are reducing fees because we have to."

And fee-cutting is taking place even as the number of firms competing for the same business multiplies. (The situation is so bad, architects say, that a running joke in the industry is that every competition "looks like an AIA convention.") For every $5 million to $10 million project in the Denver metro area, Kuehn notes, there are now 30 to 40 firms showing up at preproposal conferences, including many that had not previously worked in that sector or geographic location. The fierce competition naturally lends itself to bidding wars. In a reflection of this, the U.S. General Services Administration noted in a mid-2009 press release that bids for stimulus-funded projects came in "lower than expected."

Yet some firms say they don't discount. "Our philosophy is: If the fee is too low, let the other guy lose money," says Michael Hickok, founding principal of Hickok Cole Architects, a commercial architecture and interiors firm of about 70 in Washington, D.C. Hickok says that his clients, who are sophisticated customers, know that "squeezing another 25 cents a square foot isn't necessarily in their best interest, because that means they might get 25 cents less service."

Another downside to the fee-slashing phenomenon is that it is eroding relations not only between architects and clients but also among architects. "Clients are shopping the hell out of fees," says the New York architect whose firm bid for the office renovation. "They are aware there is desperation, and they are exploiting it. So they will talk to endless numbers of architects and get the lowest possible number, and then they might go back and say, 'Can you match that?' Then we end up with stupid-low numbers." He wonders how other architects are delivering at that price and what kind of design services they are providing.

There is a general consensus that although cutting fees might be a short-term remedy to a fiscal crisis, it can pose long-term problems, making it tougher to get fees back to previous levels. Michael Strogoff, a management consultant to designers and an advisory group member of the AIA's Practice Management Knowledge Community, suggests that instead of cutting fees, architects try to "find better ways of communicating the value of their services."

Benjamin Rook, chief executive of Design Strategies in Greenville, S.C., a 60-person firm, suggests that fee-cutting should be done only under special circumstances—when entering a new market, for example, or to salvage a firm's survival. The problem, he explains, is that cutting fees means firms have to provide more for less pay, or they will be forced to skimp on innovation to keep costs within the reduced fee. Either way, Rook adds, cutting fees "is no way to build a practice."

How long will rock-bottom prices continue to plague the profession? Only time, and the economy, will tell. Hickock, for one, is cautiously optimistic. "We have just begun to inch up fees," he says, but "we can't tell yet whether they are sticking or not." □

© 2010 Masco Corporation of Indiana





THIS IS ONE VERY **RESPONSIVE** FAUCET.



Arzo® Bath Collection

Proximity™ Sensing Technology is the next generation in responsive hands-free functionality that contributes to water efficiency. This revolutionary technology transforms the entire faucet into a sensor, automatically responding when approached. There are no optics or infrared to maintain. All backed by the industry's best 5-year limited warranty. Another way that Delta is more than just a faucet.

Visit deltafaucet.com/commercial/proximity
or deltafaucet.com/professionals

DELTA

see what Delta can do™

Circle no. 27 or http://architect.hotims.com





A ROOF AS EARTH-FRIENDLY AS COMMON SALT.

THE SIKA SARNAFIL
SUSTAINABILITY PROMISE
PERFORMANCE THAT PAYS. SUSTAINABILITY THAT'S SMART

Sika®
Sarnafil®

Did you know that 57% of the molecular weight of vinyl comes from common salt, an abundant natural resource? Our roofing membranes not only deliver unsurpassed performance but are safe to use—and good for the environment. With the longest record in sustainable roofing, Sika Sarnafil can help you meet your sustainability goals with durable, energy-efficient roofing and waterproofing solutions that protect and perform—even after decades of service.

Visit www.sustainabilitythatpays.com to discover what makes Sika Sarnafil the responsible choice for building owners, roofing consultants, contractors and architects.

Circle no. 397 or http://architect.hotims.com

www.sustainabilitythatpays.com

Sika Sarnafil, A Division of Sika Corporation Tel. 1-800-451-2504, Fax: 781-828-5365, www.sikacorp.com

→LOCAL MARKET

Charleston, W.Va.

TEXT BY MARGOT CARMICHAEL LESTER AND CLAIRE PARKER


1


2


3



4

SOON AFTER THE American Revolutionary War ended, the area now known as Charleston, W.Va.—officially established in 1794—saw its first settlers arrive. The Appalachian region was known for vast salt deposits until 1815, when natural gas was discovered, followed by coal two years later. Today, the state capital has diversified its economy to include education and healthcare, thanks to campuses for West Virginia University and the state's Community and Technical College System, plus the private University of Charleston.

"People who have a preconceived notion about West Virginia are missing out," asserts Adam Krason, principal of ZMM Architects & Engineers. "We have very affordable housing, short commutes, quality public and private schools, low crime rates, great cultural institutions like the West Virginia Symphony Orchestra, and easy access to a variety of outdoor activities."

Charlie West, as the locals call it, has been somewhat insulated from the larger real-estate roller coaster, in part because it never reached the precipitous highs of other U.S. markets. "We have been lucky in a way," allows Thomas Worlledge, Charleston-area manager for Wheeling, W.Va.–based McKinley & Associates. "We did not see a boom period, so we did not depend only on the commercial sector for our growth. But because of this lack of private development, we have been dependent on nonprofits or state and local government to drive development."

Most projects are led by local architects, a point of pride for the Charleston design community. "There's an assumption that Charleston is too small to have in-town architects that are worth using for large or complicated projects," says Mark Spencer, senior project architect for Associated Architects. "[But] there are several local architectural firms that have won numerous awards and received national recognition for their designs." □

1–4: SILLING ASSOCIATES; EDWARD WEBER; ZMM ARCHITECTS & ENGINEERS; UNIVERSITY OF CHARLESTON

1. Chesapeake Energy Eastern Regional Headquarters
ARCHITECTS: Elliott + Associates Architects, Oklahoma City (lead); Silling Associates, Charleston. **COMPLETION:** Canceled. **BRIEF:** $39 million project stopped with about 15% of site work completed; winner, AIA West Virginia 2009 Honor Award for Unbuilt Work.

2. Haddad Riverfront Park and Schoenbaum Stage
ARCHITECT: Silling Associates. **COMPLETION:** 2010. **BRIEF:** $2.4 million SBA grant plus $400,000 in private donations upgrades an amphitheater and improves access to downtown.

3. Kanawha County Public Library
ARCHITECT: ZMM Architects & Engineers, Charleston. **COMPLETION:** 2012. **BRIEF:** $40 million, 120,000-s.f. library is seeking LEED Silver.

4. University of Charleston East Apartments
ARCHITECT: Associated Architects, Charleston. **COMPLETION:** 2010. **BRIEF:** $22 million student residence; winner, City of Charleston's 2009 Growing Smart Award.

POPULATION/EMPLOYMENT
Nearly 51,000 residents; -2.7% job growth, first quarter 2010.

OFFICE MARKET
7% Class A vacancy rate on asking rates of $19/s.f.–$23/s.f.

RESIDENTIAL MARKET
Median home sale price, first quarter 2010: $194,600.

MARKET STRENGTHS
- Housing affordability
- Riverfront location
- Abundant natural resources

MARKET CONCERNS
- Youth out-migration
- Aging housing stock
- Coal-based state economy

FORECAST
"There needs to be a long-term vision for what happens here after coal," says Edward Weber, senior associate at Silling Associates. "[We] need new manufacturing and knowledge-based companies to choose Charleston as a place to invest in. ... If public and private entities do not continue to ... make the area as attractive as possible ... we are in for continued population decline."

SUSTAINABILITY PROMISE

The Promise.

As the leader in roofing durability and membrane recycling, we're committed to helping building owners, roofing consultants, contractors and architects meet their sustainability goals today—and long into the future.

The Proof.

For almost 50 years, Sika Sarnafil has been producing products safely that are safe to use—and good for the environment. We live that commitment the same way we serve our customers: not just by doing the right thing, but by doing things right.

- Unsurpassed in Durability
- First in Recycling
- Smartest in Energy Savings
- Best in Fire Performance
- Longest Record in Sustainable Roofing Systems

HOW DOES YOUR ROOF RATE?

Learn what makes our long-lasting roofing and waterproofing solutions the smart choice by visiting:
www.sustainabilitythatpays.com

Sika®
Sarnafil®

www.sustainabilitythatpays.com

We can specify almost any opening.



Copyright © 2010 ASSA ABLOY, Inc. All rights reserved.

All design professionals face challenges. Our specialized team of architectural and specification consultants can help you meet Division 8 and Division 28 specifications without compromising the integrity of your design. From product research and selection to schedule preparation and providing you with valuable training and educational opportunities, our team is there every step of the way. So relax. Let our team take care of it.

For more information, call ASSA ABLOY Door Security Solutions, 877.303.7629 or visit www.assaabloydss.com.

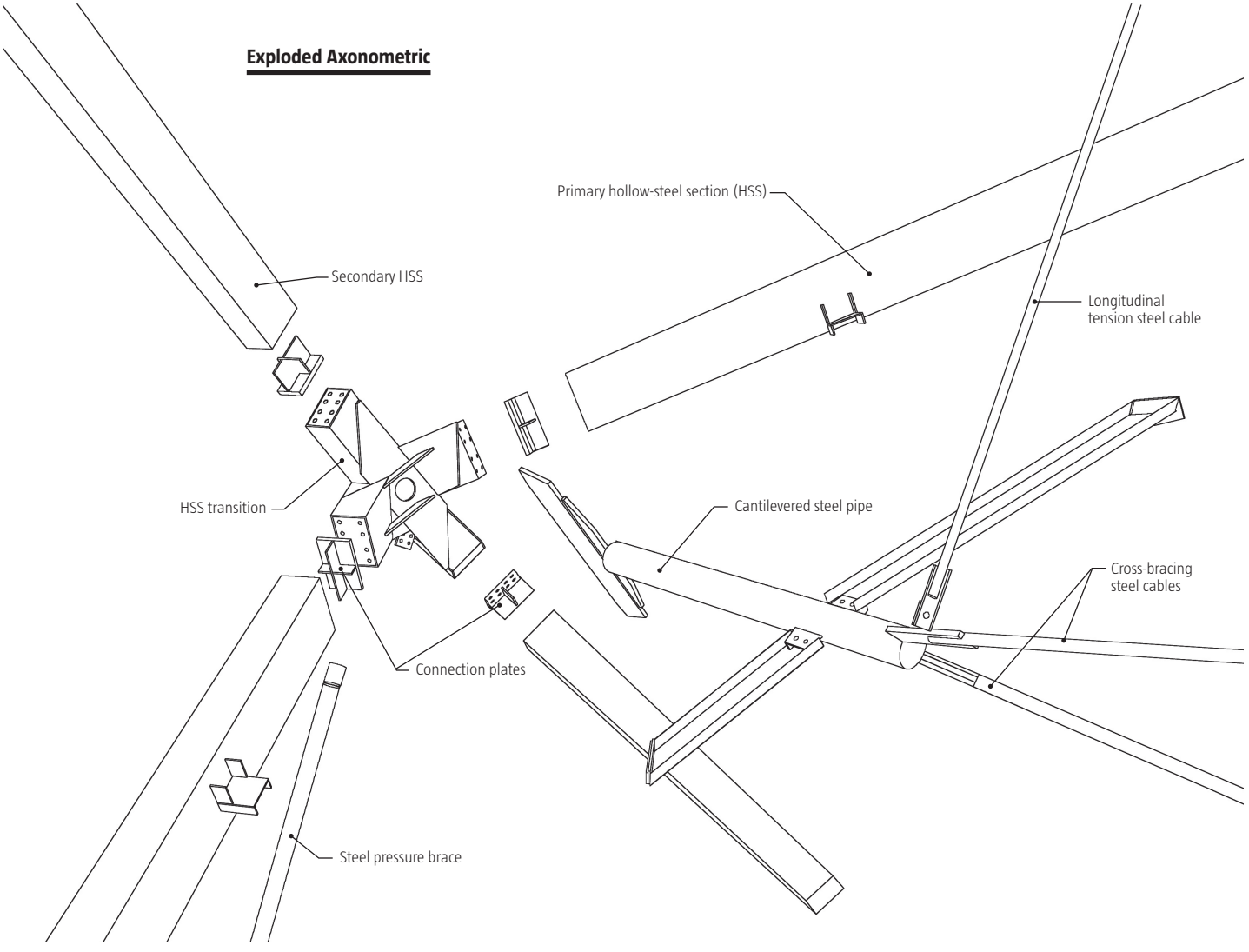
Circle no. 282 or http://architect.hotims.com

ADAMS RITE | BARON | CECO DOOR | CORBIN RUSSWIN | CURRIES | GRAHAM
HES | MAIMAN | MARKAR | McKINNEY | MEDECO eCYLINDERS | NORTON | PEMKO
RIXSON | ROCKWOOD | SARGENT | SECURITRON | YALE

ASSA ABLOY

The global leader in door opening solutions

TECHNOLOGY



→DETAIL

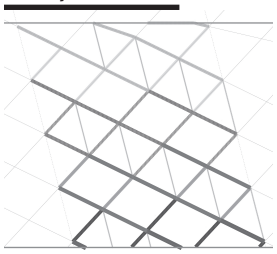
Repeating Structural Node

Project: Mur Nature Observation Tower
Architect: Terrain:loenhart&mayr
Location: Gosdorf, Austria

TEXT BY GIDEON FINK SHAPIRO



Concept Schematic





The seemingly complex design of the Mur Nature Observation Tower (above), which sits lightly on the Austrian landscape, becomes clearer when the structure is "unrolled" into two dimensions (top). By using a few building components—cables, beams, and panels (top right)—as well as a single configuration for every structural joint, Christoph Mayr and Klaus Loenhart developed a striking piece ofarchitecture.

CLOCKWISE FROM ABOVE: HUBERTUS HAMM; TERRAIN:LOENHART&MAYR; MARC LINS

OVERLOOKING THE MUR RIVER along the southern edge of Austria, where military watchtowers once marked the border with Slovenia and the fringe of the Iron Curtain, a different kind of tower now invites day hikers to ascend 168 steps and enjoy the view. This daring landmark, commissioned by the local municipality of Gosdorf, shows off the digital fabrication chops of Terrain:loenhart&mayr, a young architecture and landscape architecture practice based in Munich.

At first glance, the Mur Nature Observation Tower—89 feet tall and 28 feet wide—may resemble an amorphous nest of beams and cables held together like some kind of upright logjam. But the irregularity is an illusion. Repeating components and nodal geometries engineered by Frankfurt's Office for Structural Design form three primary elements: an external frame of hollow-steel structural members; an internal web of steel cables; and two helical stairways—cantilevered from the outer frame—that meet at the top. Each of the 24 stair segments, except for the top and bottom pair, is identical in length and angle of incline. Interchangeable save for the varying sizes of the steel members, all 21 "knots," or structural joints, share the same configuration, which helped control manufacturing costs.

Co-principals Klaus Loenhart and Christoph Mayr wanted visitors to feel as though they are climbing into a breezy treetop. The concept, explains Loenhart, was to create "a bodily experience of being part of the landscape, a 360-degree environment."

The easiest way to understand the arrangement of the steel members is to "unroll" the tower and map it in two dimensions, as the architects did with dozens of paper and digital models. The pieces form an asymmetrical diagrid; half of the diagrid's quadrangles are bisected by steel braces, while the other half are reinforced by cables stretching across the central void. Thus the Mur Tower combines beams in pure compression with cables in pure tension. Alternating push with pull, it draws on the tensegrity structures developed by R. Buckminster Fuller and the artist Kenneth Snelson during the mid-20th century.

Because the members near the top bear less weight, they are slimmer than those at the bottom. In fact, there are eight thicknesses—four each for the main beams and for the supporting beams—while the depth remains a constant 10 inches. The shift from 18-inch-diameter members at the bottom to 11-inch-diameter ones at the top not only saves material, Loenhart says, it also exaggerates the tower's apparent height when viewed from below. Another visually driven element is the cladding of anodized aluminum panels that frames the stairways, abstracting them into spiraling prisms.

Truly a machine in a garden, the Mur Tower would be for naught without its surrounding wilderness, part of the European Green Belt nature preserve, where the structure functions as a waypoint along a journey. In Loenhart's words, "Your wandering through nature is simply verticalized as you pass through." □





The safest installation meets the smartest innovations.

Next-generation LiftMaster® door operators lead the way with groundbreaking innovations that protect your clients.

Our new line of door operators protects your clients' employees and property with continuously monitored entrapment protection and state-of-the-art safety features, making it easier than ever to incorporate warning lights, bells, and timers.

Plus, they meet tough new UL325-2010 standards, which is critical in complying with state and local building codes. It's all what you'd expect from the #1 brand of professionally installed door operators. There's no smarter way to protect what matters most...your reputation.

Specify safe. Specify smart. Specify LiftMaster.
To learn more, visit liftmaster.com or call 800-323-2276.

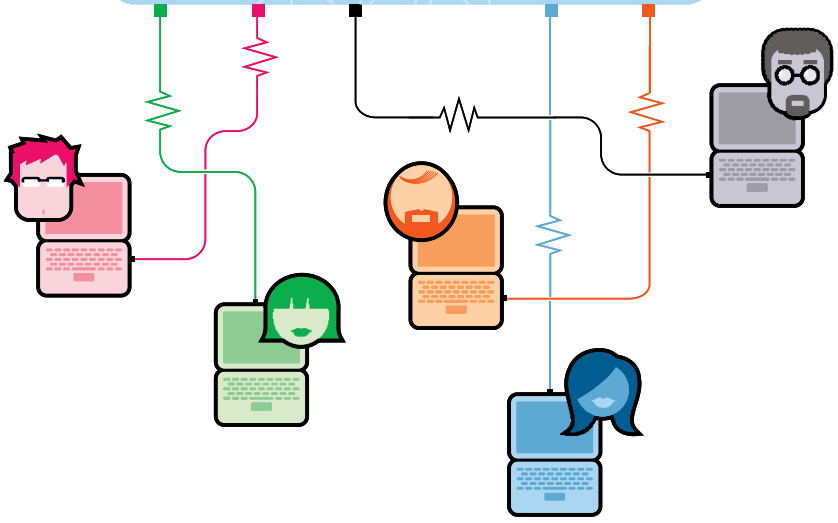
Residential Garage Door Openers • Commercial Door Operators • Access Control
Residential and Commercial Gate Operators • Telephone Entry Systems
liftmaster.com

LiftMaster®
Gate Access Systems

Circle no. 283 or http://architect.hotims.com

→COMPUTERS

In the C



REMOTE SERVERS FLOAT COLLABORATIVE PRACTICES.

TEXT BY MIMI ZEIGER
ILLUSTRATION BY HEADCASE DESIGN

WHAT DOES YOUR OFFICE'S computing infrastructure look like? Is it a local-area network (LAN) tied to a server? Or is it a "cloud"-hosted service connected to your computer by broadband? Are your graphic workstations stand-alone powerhouses? Or are they inexpensive, portable laptops tapped into a data center? These are the kinds of questions that preoccupy information technology (IT)–minded folks. And increasingly, the term "cloud" pops up in financial and computing news and in tech-related water-cooler chatter. But what can the cloud do for architectural practice?

Potentially, lots: expedite collaboration, bolster productivity, and liberate firms from costly hardware updates. But first, a definition. Essentially, cloud computing is Internet real estate. The cloud, virtual and accessed from almost any Web connection, offers remotely hosted server space and software via a broadband connection. Rather than building an on-site data center to support a LAN, which requires dedicated office space and utilities such as electricity and cooling, any company can purchase data space on an easily-accessed cloud server (off-site, rack-mounted computers). And in common parlance, the term "cloud" is lingo for software hosted on the Internet. If you've used software-as-a-service (SaaS) providers such as Google Docs or Flickr, then you've worked in the cloud. Typically, companies use SaaS providers for e-mail or accounting tools, but building industry–specific applications are increasingly available.

"It's a big database in the sky," says Rick Rundell, senior director, simulation product line, in Autodesk's AEC division, which offers several cloud-related applications. Cloud computing "allows a bank of computers to look like whatever the user is interested in. You can specify hardware and memory and pay by the minute or the hour. It allows you to run analysis applications and outsource traditional IT infrastructure to a flexible, high-performance infrastructure."

At the moment, Autodesk is fine-tuning Project Butterfly, previously known as Visual Tao before it was acquired by the software giant in 2009. "It's kind of like Google Docs for AutoCAD," says the Web app's Tel Aviv, Israel–based co-founder, Tal Weiss. "We're taking the desktop drawing to the Web and making it accessible from anywhere." Multiple users can work on a single AutoCAD drawing file in the cloud or download a version to their local desktop. Autodesk's cloud-computing philosophy equates ubiquitous and instant access with easy collaboration, bringing architects, engineers, consultants, contractors, and clients into a virtual conversation. Similarly, Autodesk's Project Bluestreak is designed to facilitate team collaboration around BIM. Bluestreak doesn't support editing a digital model in the cloud, but it is designed as a social networking–type of software that runs alongside Autodesk's Revit models.

While the "public" clouds offered by Amazon, Google, Microsoft, and other companies have the potential to make emerging practices appear more robust, they also come with growing pains. Low-bandwidth SaaS products for payroll and e-mail are generally hassle-free, but the dream of BIM in the public cloud, which would involve files of enormous size, is more problematic. And then there are the legal and security questions of data storage, such as "My building model is located in what country?"

Chris France, CIO at Little Diversified Architectural Consulting, is an advocate for firms building their own private clouds. In 2000, he set up an ersatz data center/cloud in Little's Charlotte, N.C., office. These days, it's populated by several really fast computers that provide the technology capability for the Charlotte office as well

louds

as Little's outposts in Washington, D.C.; Los Angeles; and Orlando, Fla. Desk-by-desk savings offset the investment in powerful cloud computers. A single traditional CAD workstation costs $4,000 and needs continual updating, while a "cloud box" (France's term) costs $8,000 but can be accessed by four to 20 users via much-cheaper laptops, "depending on the type of programs run and the size of data models," France says.

And unlike the public cloud, this private one can host BIM. "We've built a virtual office out of geographically different offices," France says, which has big ramifications for the way business is conducted: "You can bring an expert or designer in to work on a project from anywhere." In France's model, talent is no longer fixed to a single project in a single city; rather, each design team is pooled from across the country.

Perkins+Will consulted with France when the firm needed to figure out solutions to large-team workflow. Cloud computing helps with mobility and team collaboration, and a private cloud boosts productivity, says firm CIO Richard Nitzsche. Additionally, cloud computing will help the bottom line, he notes: "We expect to eliminate server rooms in favor of a few strategically located data centers—and with that, we'll shed an entire class of facilities issues and return overhead space to our offices for use in revenue-producing purposes."

The potential impact of architectural cloud computing (public or private) on practice is enormous, and the desire is there to make it as seamless as e-mail. The Holy Grail at the moment for AEC tech providers is efficiently leveraging the power of off-site servers to run analyses on drawings and building models uploaded into the cloud. Similar to "rendering farms," where firms outsource 3D-image processing, a suite of computers can calculate a model's energy load quickly, without taxing in-house workstations. And it's easy to imagine cloud software crunching numbers for geographic information system analyses, parametric computations, or building animations.

Compared with, say, the financial-services industry, architecture has been slow to catch on to every technological trend. And while the IT lag was made worse by the economic downturn and a reluctance to invest in new hardware, the move into the cloud is coming along at just the right time. With cheaper hardware and software refreshes, it's a competitive boon for smaller practices lacking the in-house computational might of larger firms. And that's a silver lining. □

A SINGLE TRADITIONAL CAD WORKSTATION COSTS $4,000 AND NEEDS CONTINUAL UPDATING, WHILE A "CLOUD BOX" COSTS $8,000 BUT CAN BE ACCESSED BY FOUR TO 20 USERS VIA MUCH-CHEAPER LAPTOPS.

Let's think smarter, not brighter.



Ceramic Tiles of Italy. A natural beauty.

Choosing Italian tiles is a question of style. Beauty alone is no longer enough, you have to create harmony which is beauty and respect together.
The beauty of a product of superior technical quality along with respect for working conditions and the environment.

Ceramic Tiles of Italy

For more information, please contact: **Italian Trade Commission – Ceramic Tile Department** – 33 East 67th Street – New York, NY 10065-5949 – ph (212) 980-1500 – fax (212) 758-1050 – newyork@ice.it
Ceramic Tiles of Italy, promoted by Confindustria Ceramica, is a registered trademark of Edi.Cer. S.p.a., the organizer of CERSAIE,
International Exhibition of Ceramic Tile and Bathroom Furnishings – Bologna, Italy, September 28 - October 2, 2010 – www.cersaie.it

Ministero dello Sviluppo Economico

ITALIA
Italian Trade Commission

www.italiantiles.com
www.s-tiles.it

Circle no. 387 or http://architect.hotims.com

→ECO

What's in a Name

SUSTAINABILITY IS MORE THAN 'DESIGN-SPEAK.'



TEXT BY LANCE HOSEY
ILLUSTRATION BY PETER ARKLE

"IF YOU ASK a designer to name the most important issues facing design today," wrote Alice Rawsthorn in *The New York Times* earlier this year, "one is bound to be sustainability, which is design-speak for helping the rest of us to live responsibly, ethically and environmentally." Design-speak? "I wasn't implying that designers and architects invented the term," Rawsthorn tells me. "They didn't. They simply appropriated it." "Appropriate" means "to take exclusive possession of." So we didn't invent it—we just stole it.

"Our profession's word of choice is 'sustainable,'" Doug Steidl, past president of the AIA and new dean of architecture at Kent State University, wrote in 2005. "If ever there were a word more calculated to evoke misgivings ... or, at best, a yawn, it has to be 'sustainable.'" The term suggests sacrifice, Steidl complained, and architects should champion growth. "We cannot ... be boxed in by our own language."

Of course, it's not "our" language. After *The Limits to Growth* (1972), possibly the first reference to "sustainability" as we now use the term, Lester Brown's *Building a Sustainable Society* appeared in 1981, and six years later came *Our Common Future*, the United Nations (U.N.) report that gave us the most popular definition. All of these deal with equity and resources, however, and have little to do with architecture. "Sustainable development requires meeting the basic needs of all," declared the U.N., "and extending to all the opportunity to satisfy their aspirations for a better life." Is that design-speak, or just good sense?

Today, Steidl tells me, the word "has flooded the marketplace. Everyone has jumped on sustainability as a marketing device. I'm skeptical." As architects, we all have good reason to be skeptical. Many designers first learned about green through the LEED rating system, so many may equate sustainability with buildings. What's the harm? There's more at stake than revisionist history or linguistic thievery. A key challenge is bridging the divides between professions: Architecture can contribute to sustainability, but it can't singlehandedly create it. A zero-emissions community isn't sustainable without social equity—such as affordable housing. For architects to discuss green as though it's confined to construction alone hampers our ability, even our motivation, to find the broadest avenues toward innovation.

Green advocate Thomas Friedman once wrote, "In the world of ideas, to name something is to own it." Architects, however, could spend less time trying to own sustainability and more time trying to understand it. □

It's time for LightingforPeople.com

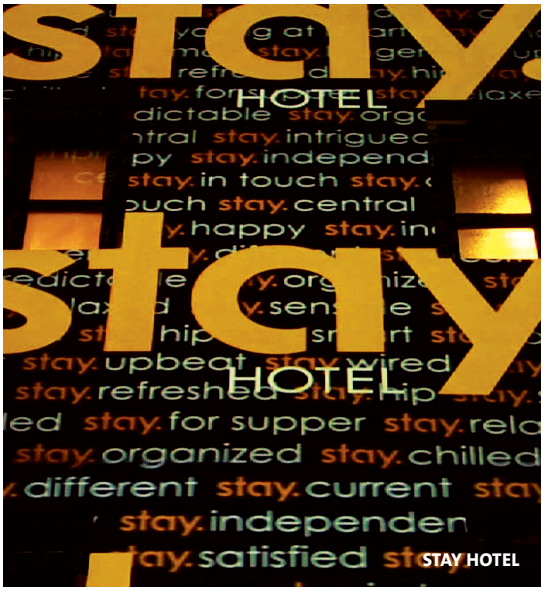
Circle no. 186 or http://architect.hotims.com

→A/V

2010 *Pro AV* Spotlight Awards



NYU DOLAN RECORDING STUDIO/RESEARCH LAB



STAY HOTEL

TEXT BY BRAD GRIMES

HIGHLIGHTS FROM THIS YEAR'S CROP OF AWARD-WINNERS SHOW THE BREADTH—AND CREATIVITY—OF A/V DESIGNERS.

BEST CORPORATE A/V PROJECT (OVERALL)

BANK OF AMERICA BUILDING

A/V Consultant: CMS Audiovisual Consultants
Architect: Cook + Fox Architects

The Bank of America building in New York was designed to earn LEED Platinum certification. As such, the A/V designs from CMS Audiovisual Consultants had to be as green as possible. The project spanned 38 floors, 50 presentation rooms, 63 videoconferencing rooms, three trading floors, and more. CMS built environmental controls for shades and lighting into the control systems and designed programmable timing systems for shutting down videowalls, projectors, and widespread displays.

BEST EDUCATION A/V PROJECT (TIE)

NYU DOLAN RECORDING STUDIO/ RESEARCH LAB

A/V Consultant: Walters-Storyk Design Group
Architect: Gensler

All the world's a stage, and virtually every room in NYU Steinhardt School's new James L. Dolan Recording and Teaching Complex can be a live recording environment—even the bathrooms. That's because A/V designer and acoustician Walters-Storyk Design Group, integrator Masque Sound, and architecture firm Gensler built the complex on a raised-access computer floor, with integrated cable troughs and hatch doors to give faculty access to reconfigure any room as a recording room.

BEST EDUCATION A/V PROJECT (TIE)

CUYAHOGA COMMUNITY COLLEGE CENTER FOR CREATIVE ARTS

A/V Consultant: Westlake Reed Leskosky
Architect: Robert P. Madison International

"Anywhere to anywhere." Ask the team from Westlake Reed Leskosky's (WRL) Innovative Technology Design Group where it needed to send A/V signals around the Center for Creative Arts at Cuyahoga Community College, and that's what they'll tell you. The center includes two recording studios, five production control rooms, seven high-tech A/V classrooms, dance and theater rehearsal

→

CALL FOR ENTRIES

COMMERCIAL / CULTURAL / EDUCATIONAL / GOVERNMENTAL / MULTIFAMILY HOUSING / HEALTH-RELATED / SINGLE-FAMILY HOUSE / INDUSTRIAL / RECREATIONAL / RELIGIOUS / URBAN DESIGN

THE P/A AWARDS RECOGNIZE UNBUILT PROJECTS THAT DEMONSTRATE OVERALL DESIGN EXCELLENCE AND INNOVATION.

58TH ANNUAL P/A AWARDS

Judging will take place in November 2010. Winners will be notified in December 2010, published in the February 2011 issue of ARCHITECT, and honored at a ceremony in New York that same month.

ELIGIBILITY

Architects and other design professionals practicing in the United States, Canada, or Mexico may enter one or more submissions. All entries must have been commissioned by paying clients for execution. Proposals may be for any location, but work must have been directed—and substantially executed—in offices in any one of those three countries. Projects may not have been featured in other national design publications. All entries must have been commissioned for compensation by clients with the contractual intention and the authority to carry out the submitted proposal. Projects must have a completion date after January 1, 2011.

FEES

First Entry: $195
Subsequent Entry: $150
Late Fee: $50

DEADLINES

Regular: October 8, 2010 (registration and postmark deadline)
Late: October 13, 2010 (registration and postmark deadline, additional $50 fee per entry)

FOR MORE INFORMATION

e-mail: paawards@architectmagazine.com

p/a

REGISTER → paawards.com

HDI Railing Systems

Sophisticated simplicity.



Precision railing systems and contemporary door pull designs, coordinated to complement your next project.

Circle no. 481 or http://architect.hotims.com

3905 Continental Drive • Columbia, PA 17512 USA
PH: 717-285-4088 • FAX: 717-285-5083
Email: info@hdirailings.com • www.hdirailings.com



PARX CASINO



JIMMY CARTER LIBRARY & MUSEUM



BANK OF AMERICA BUILDING



studios, and seven video-editing suites. WRL estimates the all-digital infrastructure saved the school 40 percent of the cost of an analog system.

BEST MUSEUM A/V PROJECT
JIMMY CARTER LIBRARY & MUSEUM
A/V Integrator: Design and Production
Architect: Gallagher & Associates

Twenty-three years after first working on the Jimmy Carter Library & Museum, A/V and museum exhibit integrator Design and Production (D&P) won the chance to overhaul it with 21st century technology. Despite a sizable budget, D&P decided that centralized control of every single A/V system wasn't necessary. The majority of display systems and interactive stations were tied to controlled power and operated locally. Larger presentation systems were networked back to a pair of control rooms and tied together using show controllers that also run a daily scheduler for monitoring the major exhibits.



BEST HOSPITALITY A/V PROJECT
STAY HOTEL
A/V Consultant: Robert Singer & Associates
Architect: Stonehill & Taylor

It's not easy to stand out in New York's Times Square. But that's what Hampshire Hotels & Resorts wanted when it approached Robert Singer & Associates to work on its Stay Hotel. The company developed a 10-story video projection system for the interior courtyard and a four-story system for the exterior façade. To feed the 17 projectors, DigitalMediaDesigns of Columbia, Md., specified one computer for each projector, integrated into a system that can be controlled from any desktop PC or handheld device. Singer & Associates oversaw development of custom, high-definition content, including branding, that changes seasonally and at specific times of day.



BEST RESTAURANT/CASINO A/V PROJECT
PARX CASINO
A/V Consultant: Production Technology Consultants Group
Architect: Jerde Partnership

When Greenwood Racing got approval to build the 260,000-square-foot Parx Casino in Bensalem, Pa., it contracted with Production Technology Consultants Group (PTC) to design all the A/V and production lighting systems and to supervise its own engineering staff during installation. From the massive digiLED displays out front to the various 108-inch TVs throughout the interior, PTC created a massive video-routing system to send any source to any display. PTC is now working with the client on a massive expansion with more gaming space, a hotel, and a showroom, all integrated into the existing A/V control system.

For complete coverage of the 2010 Pro AV *Spotlight Awards, go to proavmagazine.com.*

THE REST OF THE WINNERS:

BEST CORPORATE A/V PROJECT (UNDER $250K)
BOSTON SCIENTIFIC VISITORS CENTER
A/V Integrator: Sensory Environment Design

BEST GOVERNMENT A/V PROJECT (FEDERAL)
U.S ARMY TRADOC CLASSROOM XXI MODERNIZATION PROGRAM
A/V Integrator: Audio Video Systems

BEST GOVERNMENT A/V PROJECT (STATE & LOCAL)
NEW YORK CITY HALL SITUATION ROOM
A/V Integrator: AVI-SPL

BEST ENTERTAINMENT A/V PROJECT
CENTRE OF THE CELL
A/V Integrator: D J Willrich

BEST RETAIL A/V PROJECT
PEEPS & COMPANY
A/V Consultant: RTKL Associates

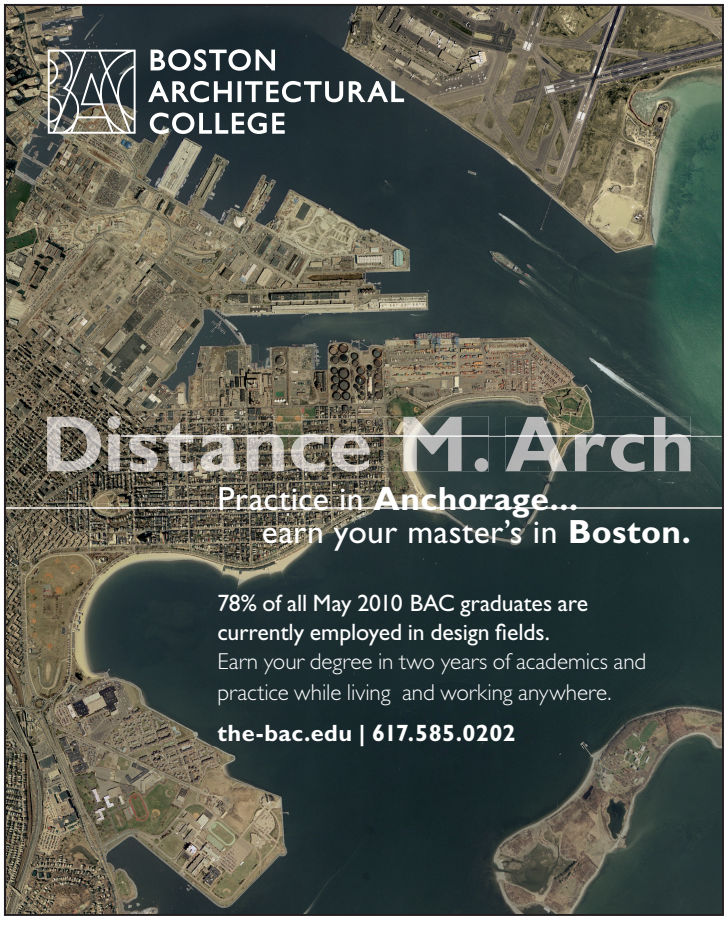
BEST HEALTHCARE A/V PROJECT
CENTER FOR CONNECTED MEDICINE
A/V Consultant: Sextant Group

BEST HOUSE OF WORSHIP A/V PROJECT
THE BLOCK
A/V Integrator: Mankin Media Systems

BEST RESIDENTIAL A/V PROJECT
CLASSIC COMFORTS
A/V Integrator: Electronics Design Group

JUDGES' AWARD
NYC VISITORS INFORMATION CENTER
A/V Integrator: VideoSonic Systems

JUDGES' AWARD
COCA-COLA LIVE SITE PAVILION
A/V Integrator: Dangers
A/V Consultant: Robert Levac Design Services

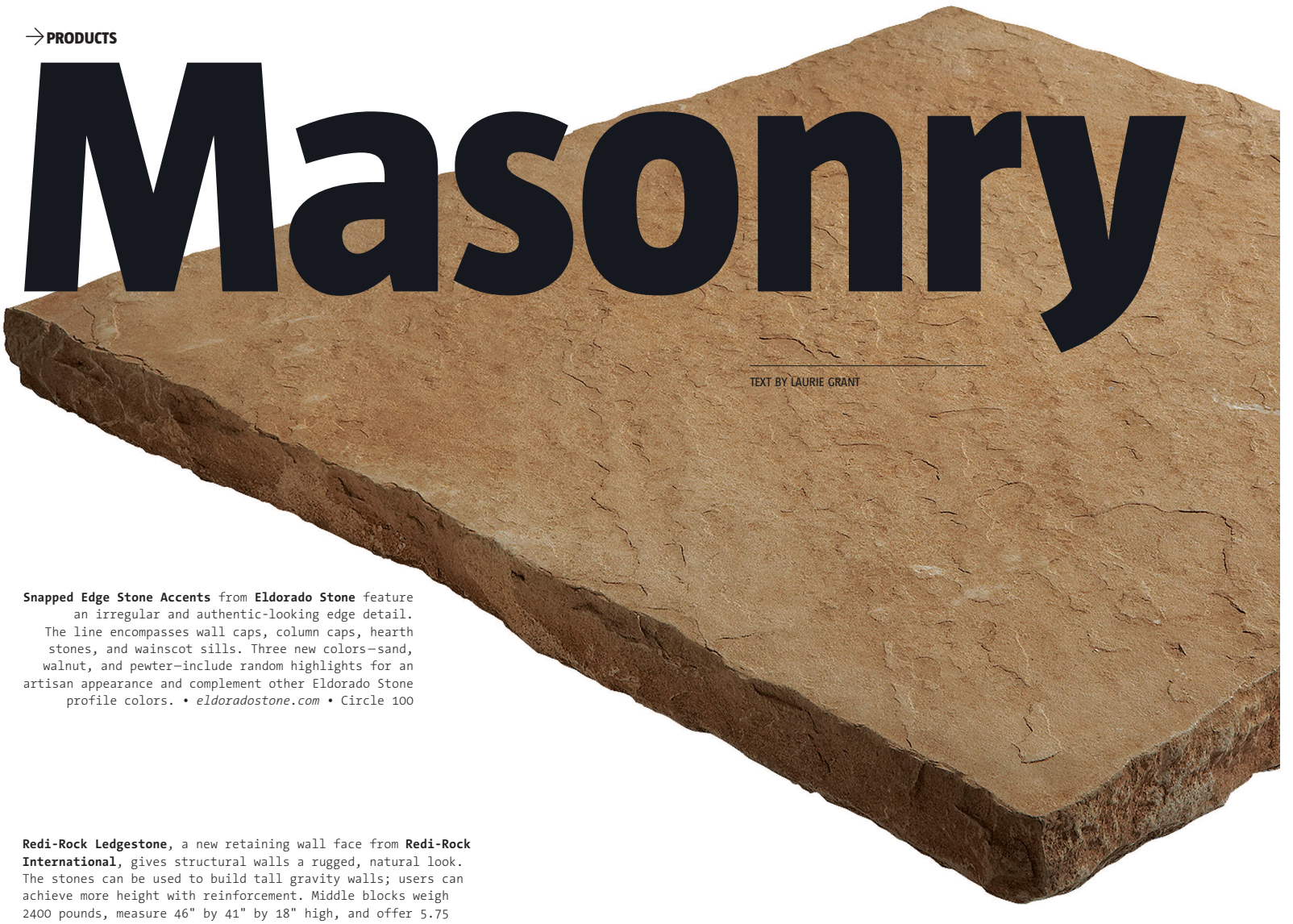


Circle no. 284 or http://architect.hotims.com

→PRODUCTS

Masonry

TEXT BY LAURIE GRANT



Snapped Edge Stone Accents from **Eldorado Stone** feature an irregular and authentic-looking edge detail. The line encompasses wall caps, column caps, hearth stones, and wainscot sills. Three new colors—sand, walnut, and pewter—include random highlights for an artisan appearance and complement other Eldorado Stone profile colors. • *eldoradostone.com* • Circle 100

Redi-Rock Ledgestone, a new retaining wall face from **Redi-Rock International**, gives structural walls a rugged, natural look. The stones can be used to build tall gravity walls; users can achieve more height with reinforcement. Middle blocks weigh 2400 pounds, measure 46" by 41" by 18" high, and offer 5.75 square feet of face. • *redi-rock.com* • Circle 101



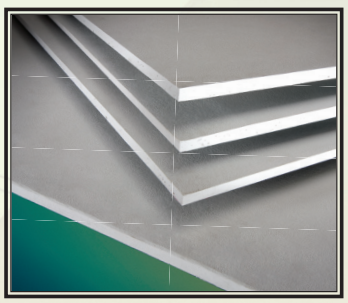
I N T R O D U C I N G :

GREENGLASS® Tile Backer

a Temple-Inland product



Need superior moisture and mold resistance *plus* high recycled content?



Tough as Expected. ***Green as it Gets.***

We've got your back.

GreenGlass® fiberglass-faced gypsum tile backer board delivers the tough moisture and mold protection so critical in high moisture and humidity areas, plus a standard-setting level of recycled content – at least 90% – to contribute valuable credits in multiple green building rating systems. GreenGlass is a superior tile substrate for walls, ceilings, shower and tub enclosures, countertops and residential or light commercial floors. It's easier to install than cement board and is ideal for use in bathrooms, commercial and industrial kitchens, laundry or utility rooms, locker rooms, laboratory white rooms, operating rooms, enclosed swimming pools, residential steam rooms... and even in high-humidity non-tile areas. Basically anywhere that moisture resistance is crucial. When it comes to the most demanding design requirements and the greenest construction standards, GreenGlass has your back.

For more information, visit ***www.GreenGlassInfo.com***

Circle no. 468 or http://architect.hotims.com

ISO 14021

SCS CERTIFIED
SCS-MC-002033

U.S. GREEN BUILDING COUNCIL MEMBER

MAS CERTIFIED GREEN

Temple-Inland®

www.templeinland.com | 800-231-6060

©2010 TIN, Inc. Temple-Inland and GreenGlass are registered trademarks of TIN, Inc.
The 'USGBC Member Logo' is a trademark owned by the U.S. Green Building Council and is used by permission.



For light commercial and residential retaining wall systems where aesthetics are a key consideration, **BelAir Wall**, a **Belgard Hardscapes** brand, meets demands. The system can be installed in a random pattern using any combination of units so long as vertical lines do not span more than 18" in height. Random patterns are created using an equal square footage of 3"- and 6"-high units. • *belairwall.com* • Circle 102

Innovative Design *Breeds Innovation*



Bridges Center, Memphis, TN

ENERGY STAR PARTNER

You create, we get inspired. We innovate so you can get inspired. That's why MBCI continues to develop new products that support contemporary and sustainable design, meeting the environmental demands in place today with beauty that will last for years to come. Our recently introduced line of Eco-ficient™ insulated metal panels enhance the performance rating of modern facilities while our NuRoof® retrofit system is ideal for roof renovations. Put them together and incredible things can happen.

We believe that being truly innovative holds some risk. Boundaries are pushed. But, MBCI is with you. We have the best Weathertightness Warranty available. And, we have product engineers that can help turn your ideas into reality.

To learn more about the *Bridges Center* project featured above, our wide variety of Architectural CEUs, or how MBCI can help add beauty and long life to your project, visit www.mbci.com/arch.

Houston, TX (Corporate) 877-713-6224 | **Adel, GA** 888-446-6224 | **Atlanta, GA** 877-512-6224 | **Atwater, CA** 800-829-9324 | **Dallas, TX** 800-653-6224
Indianapolis, IN 800-735-6224 | **Lubbock, TX** 800-758-6224 | **Memphis, TN** 800-206-6224 | **Oklahoma City, OK** 800-597-6224 | **Omaha, NE** 800-458-6224
Phoenix, AZ 888-533-6224 | **Richmond, VA** 800-729-6224 | **Rome, NY** 800-559-6224 | **Salt Lake City, UT** 800-874-2404 | **San Antonio, TX** 800-598-6224

MBCI®
Metal Roof and Wall Systems

Circle no. 402 or http://architect.hotims.com





Olde Hanover Prest Brick by **Hanover Architectural Products** creates the look of aged clay brick pavers reminiscent of European villages. Sides are contoured to enhance the worn, weathered appearance. Each brick is uniform in size for efficient installation; polymeric sand is recommended for joint filling. • *hanover pavers.com* • Circle 103

Introducing Lumber Liquidators Commercial Sales Team









The BEST Selection of exotic and domestic solid, engineered, bamboo, laminate, cork and resilient flooring. Our Commercial Wholesale Team is ready to help you, your contractors and your customers with any project.

HARDWOOD FLOORS FOR LESS!
LUMBER LIQUIDATORS
www.lumberliquidators.com/commercial

COMMERCIAL SALES
1-800-274-2360

Architectural & Commercial Services

We can provide low prices, product-specific expertise, spec sheets, samples and more.
Call 800-274-2360 or
email: llwholesale@lumberliquidators.com.

Circle no. 281 or http://architect.hotims.com





HanStone®
Quartz



Hanex®
Solid Surfaces

As global leaders in manufacturing surfaces, we look forward to becoming the name you call when you need surfacing products made to perfection. Hanwha Surfaces, delivering the industry's most comprehensive quartz and solid surfacing solutions – with unequalled consistency of color, texture and quality.

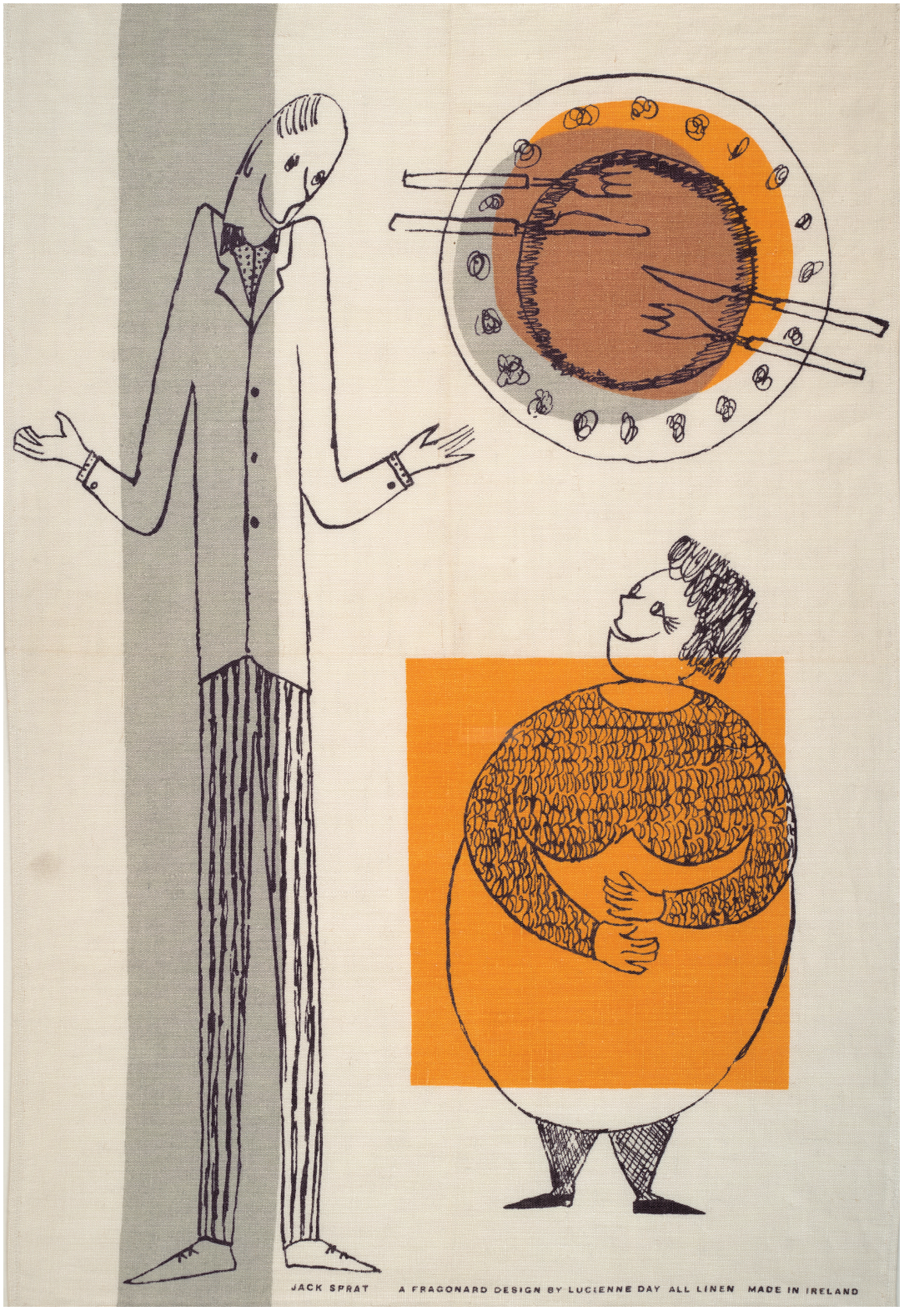
Hanwha L&C | Surfaces

Perfection Delivered.

888.426.9421 | hanwhasurfaces.com

Circle no. 285 or http://architect.hotims.com

CULTURE



→EXHIBIT

If you're a Mid-Mod fan, Washington, D.C.'s Textile Museum has a show for you: **Art by the Yard: Women Design Mid-Century Britain**. The exhibit showcases the work of three women whose use of color and graphics in domestic textiles brought high design to the masses in the postwar U.K.: Marian Mahler, Jacqueline Groag, and the star of the show, Lucienne Day. Although much of Day's output was abstract, geometric, and unquestionably gorgeous, the designer—who often worked with her husband, Robin, a noted furniture maker—could also be whimsical, as the *Jack Sprat Glass Towel* (left) demonstrates. Through Sept. 12. *textilemuseum.org*



→BOOK

T.S. Eliot once wrote, "Immature poets imitate; mature poets steal." James Macaulay's well-illustrated biography of **Charles Rennie Mackintosh** would argue that the epigram could also apply to Scotland's most famous architect. Macaulay, a former chairman of the Society of Architectural Historians of Great Britain, has investigated Mackintosh's notebooks, drawings, and built work and concluded that the Arts & Crafts designer's output was not quite as original as some might believe. Does the claim hold water? Decide for yourself. $65; W.W. Norton & Co.



→EXHIBIT

Earlier this year, the New Practices Committee of the AIA New York chapter held its third biennial portfolio competition for practices in the five boroughs that are less than five years old. Now, the seven winners (out of 65 entrants) are being celebrated in the largest **New Practices New York** exhibition ever at the Center for Architecture. Easton+Combs—a finalist this year in the Museum of Modern Art's P.S. 1 Young Architects Program—was the highest honor winner. In addition to the expected models and images on display, such as Archipelagos' rendering for the Academy of Performing Arts in Sarajevo, Bosnia and Herzegovina (above), each of the winning firms produced two short films specifically for the exhibit. Through Oct. 23. *aiany.org*



→EXHIBIT

If U.S. architects know about the photographer Ishimoto Yasuhiro, it's likely because his images of Kyoto, Japan's 17th century Katsura Imperial Villa appeared in the influential 1960 book *Katsura: Tradition and Creation in Japanese Architecture*, which featured essays by Kenzo Tange and Walter Gropius. What is less well-known is that Tange cropped and sequenced Ishimoto's work in an effort to influence the debate over what direction Japan's postwar reconstruction should take. Fifty years later, thanks to the Museum of Fine Arts, Houston exhibition **Katsura: Picturing Modernism in Japanese Architecture, Photographs by Ishimoto Yasuhiro**, many of these same images, including the untitled one at left, can be experienced as originally intended: full-size and agenda-free. Through Sept. 12. *mfah.org*

PREVIOUS PAGE: COURTESY JILL A. WILTSE AND H. KIRK BROWN III COLLECTION OF BRITISH TEXTILES; CLOCKWISE FROM TOP LEFT: COURTESY W.W. NORTON & CO.; COURTESY ARCHIPELAGOS; © ISHIMOTO YASUHIRO

→CRIT

Hat Trick

THE CENTRE POMPIDOU-METZ EMBODIES SHIGERU BAN'S PARTICULAR BRAND OF LOW-TECH INNOVATION. BUT CAN IT PUT ITS HOME CITY ON THE CULTURAL MAP?



CORBIS

TEXT BY CATHY LANG HO



Cathy Lang Ho is a writer and editor based in New York City.

WHEN THE CENTRE GEORGES POMPIDOU launched its competition in 2003 to design an outpost in the sleepy Alsatian town of Metz, its shortlist of top architectural talent produced the expected stratum of eye-catching designs, but Shigeru Ban's winning submission was by far the most eccentric. To the competition organizers, his peculiar object—which has been likened to everything from a UFO to a paper lantern to some kind of crustacean—must have seemed the most likely successor to the Guggenheim Museum Bilbao in terms of putting an out-of-the-way city on the map. It certainly looks as odd and thrilling as Richard Rogers and Renzo Piano's design must have appeared to the Pompidou's selection committee in 1971.

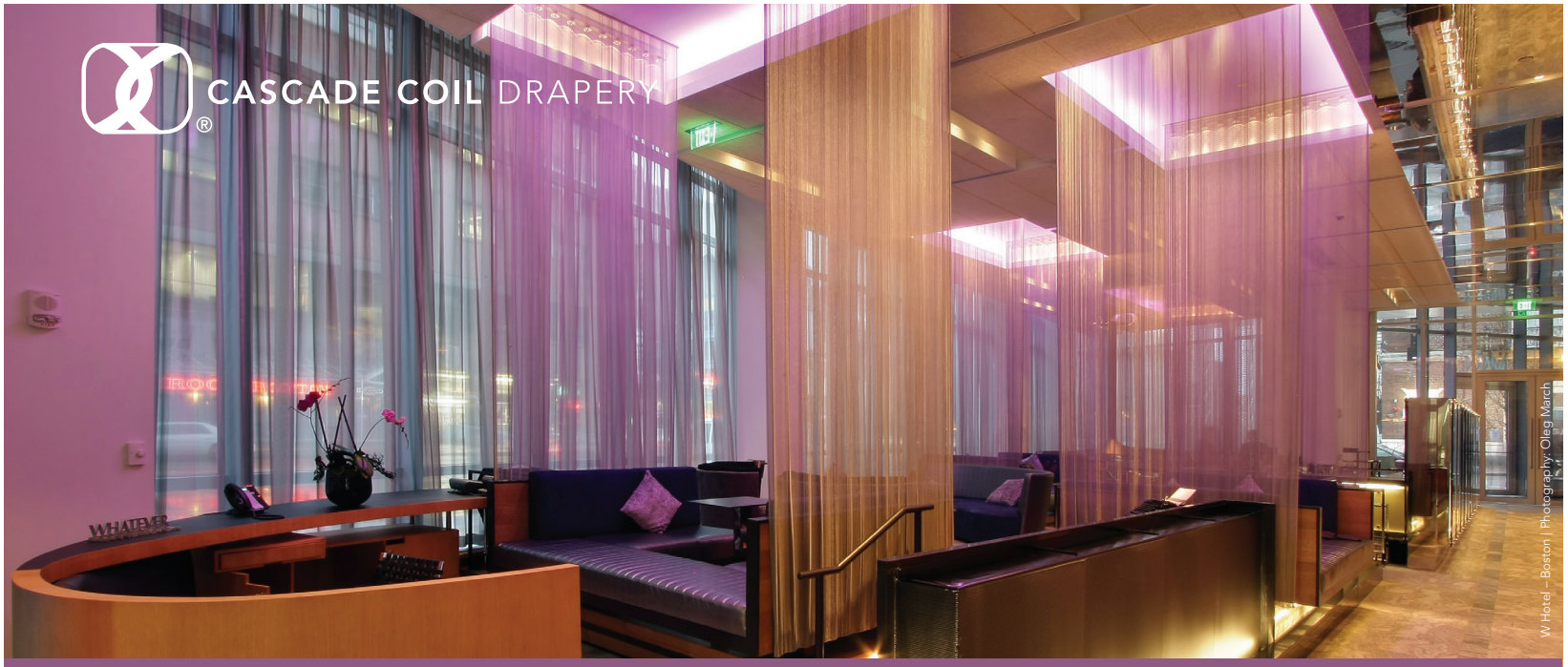
Designing the follow-up to one of the most radical pieces of architecture of the 20th century must have been daunting, for the Centre Pompidou-Metz's administrators and the architect alike. Ban acknowledges, "There is no real similarity, except that it also strives for innovation." The Tokyo-based architect certainly has proved to be an innovator, most notably with his paper-tube constructions that demonstrate his interest in low-cost, lightweight, low-tech materials and systems. His ability to achieve elegant, often deceptively complex-looking results with off-the-shelf materials and technology made him an interesting choice for the museum.

It's common today for high-end architecture—especially of the disorderly, sculptural sort, epitomized

→







Woven Wire Fabric

Projects include multi-story wire mesh draperies for hotels, auditoriums, and casinos; curved dividers for visual merchandising; window treatments for private homes; safety screening for industrial settings; sculptural forms for urban gardens; decorative interior/exterior wall coverings for buildings and parking garages; aviary round weave screening for animal habitats, and see-through appealing barriers for commercial security. Whatever the application, let us help you realize your creative vision.

www.cascadecoil.com | 800-999-2645

Circle no. 81 or http://architect.hotims.com



by the work of Frank Gehry and Zaha Hadid—to rely on all manner of customized components. And of course the Pompidou was a seedbed for ingenious new building systems, such as Peter Rice's cast-steel gerberettes that in turn defined the building's very profile. By contrast, the Pompidou-Metz uses no novel fastening devices, brackets, or systems. Ban consciously avoids using sophisticated joints or customized components, finding them expensive and wasteful.

The building, which was designed in collaboration with architects Jean de Gastines and Philip Gumuchdjian, was built for a reasonable $90 million and meets sustainable development criteria that Metz has outlined for future projects in this planned cultural district. Most of the gestures are passive, such as a general conservativeness with materials, as well as deep overhangs that shade the walls and a Teflon-coated fiberglass membrane that allows a fair amount of natural lighting to enter the galleries.

Though the curves appear tricky, a bird's-eye view reveals that it's actually a fairly regular geometry—a rigid hexagon, pulled to a peak to make way for the elevator and create a grand entrance foyer, and pulled

The box form in museums is perhaps inevitable, but Ban mixes things up by stacking three long, rectangular galleries, or what he calls "tubes," on different axes. Each gallery terminates in a dramatic picture window that frames important local monuments: One is pointed at Metz's 13th century Gothic cathedral (near left).



DORMA

For lightness of touch.
DORMA TS93 in Contur Design.

With its unique cam and roller design, the TS93 System in Contur Design represents the pinnacle of surface applied door closers, enabling a door to open much easier than one operated by a rack and pinion closer. The ADA-compliant TS93 provides regular arm operating efficiency with the sleek aesthetics of a track arm.



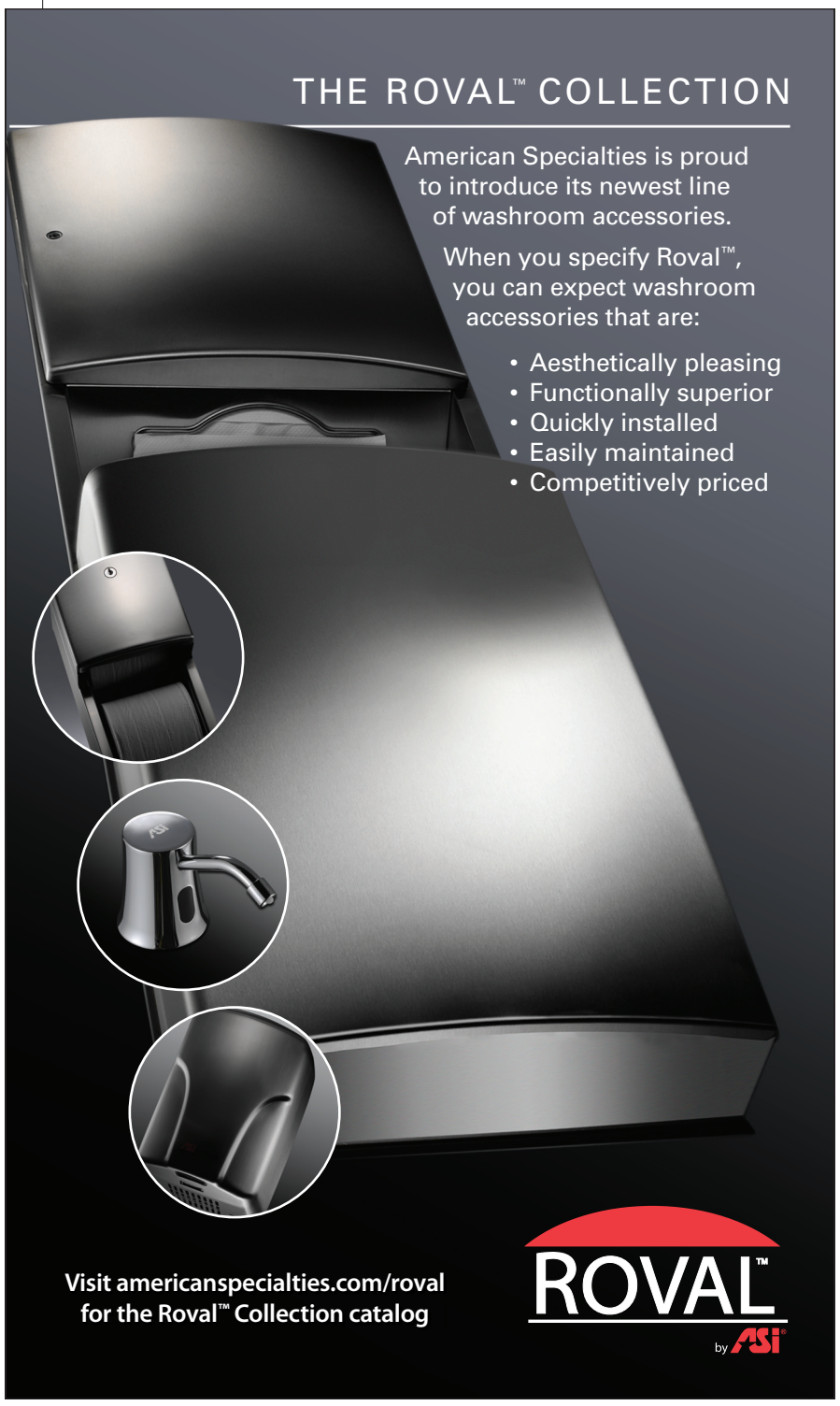
DORMA By Choice™

Experience the difference—
Premium products, superior customer service, exceptional brand.

DORMA Architectural Hardware · 800-523-8483 · www.dorma-usa.com

Circle no. 189 or http://architect.hotims.com

→ IT'S COMMON TODAY FOR HIGH-END ARCHITECTURE TO RELY ON ALL MANNER OF CUSTOMIZED COMPONENTS. BAN CONSCIOUSLY AVOIDS THEM.



Circle no. 243 or http://architect.hotims.com



CORBIS

Woven hat or infinitely repeated Star of David? The Pompidou-Metz's sculptural roof is based on a regular hexagon, pulled to a peak to allow for a grand foyer, and pulled downward at the points. The structure is a system of layered and bolted timbers.

downward on each point, the roof appearing to funnel into treelike pillars to the ground. The hexagon is the very foundation of the structure, following precisely the composition of a woven bamboo hat, traditionally worn by Asian rice farmers, which Ban found in a Paris shop 10 years ago. (Though why an Asian hat should be the reference for a project in Alsace remains inexplicable. My husband offered a more offbeat interpretation: He saw an infinitely repeated Star of David, which wouldn't be too inappropriate, given that the region is home to one of the largest Jewish communities in France.)

Ban was clearly turned on by the simplicity and logic of the hat's structure: bamboo weave, topped by a layer of insulation, and oil paper for waterproofing. His building has the same basic blueprint. Some of the early schemes explored the possibility of a truly woven structure; if he could have pulled off a large-span, self-supporting space frame based on a woven material (as some engineers are currently trying to do, mostly with more malleable materials such as fiber-reinforced polymers), that would have been thrilling. As built, the structure is actually a system of layered and bolted timbers.

Perhaps unsurprisingly, the architects' commitment to creating a sculptural roof has led to some jarring

moments of disconnect with what's going on below. The meeting of the roof with the elevator column looks awkward, its square form filling an oculus that's been patched in with a sort of corrugated panel. A transparent corrugated plastic appears also as an enclosure of the foyer, but has a provisional feel.

The Pompidou-Metz embodies several concepts that were key to the Parisian flagship, such as structural expressiveness, transparency, lightness, and a fluidity between indoor and outdoor space, all driven by a desire to be a public gathering space. It will be a greater challenge for the museum to become a new urban focal point because it's located in an open clearing, on the wrong side of the tracks. Given the vast private and public efforts being poured into its development, Metz will surely evolve into an important urban pole for the region—in time.

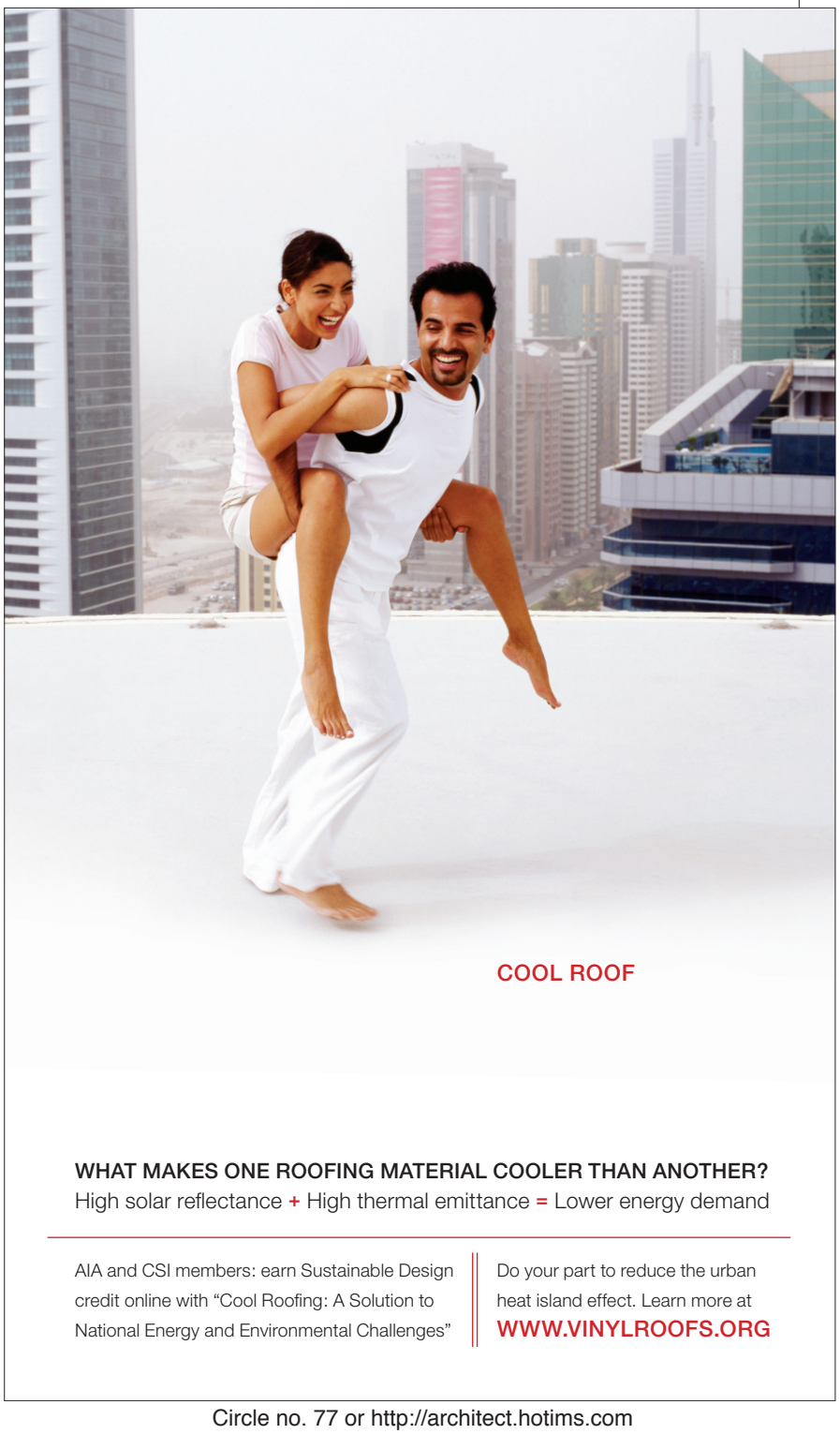
The Pompidou will make a difference, but equally if not more important to Metz's rebirth is the TGV, which arrived in 2007 (the museum had targeted a simultaneous opening, to mark the 30-year anniversary of the original Pompidou, but that didn't happen). The TGV has transformed Lyon, Marseille, Lille, and Bordeaux into vibrant regional centers within a relatively short two decades, and it will no doubt give a similar boost to Metz.

Though the Guggenheim kicked off the franchise trend, French institutions are carrying it to the next level. In addition to Pompidou-Metz, splashy Louvre satellites are now being built in Lens, France (SANAA/Imrey Culbert), and Abu Dhabi, United Arab Emirates (Ateliers Jean Nouvel). The government's "cultural decentralization" campaign overturns the imperial tradition of hoarding a nation's wealth and treasures in the capital. According to French law, the holdings of national museums may never be sold, so franchising is a strategy to get the most out of their collections.

Museum-building has changed dramatically since the original Pompidou was completed in 1977. First, truly open competitions—the sort that threw the young and unknown 30-something Rogers and Piano onto the international architecture stage—are pretty much extinct, as large commissions are now routinely filtered through select (and quasi-identical) shortlists. Second, museums and cities now insist on insta-icons, obliging their architecture to be sensational.

This makes the architecture exhibition that's part of "Master-pieces?"—the Metz's inaugural show—all the more fascinating. Curated by Aurélien Lemonier, it highlights 28 important modern museums by well-known and less-known names alike. The meaty catalogue that accompanies it includes a comprehensive chronology of over 80 projects, including a dozen now in the works. What's striking is how the French government has acted as a consistent patron of cutting-edge architecture, in many instances providing architects with their first significant commissions or foray into cultural building.

The display on the Paris Pompidou includes a wonderfully colorful pop section drawing, an original model, and best of all, a charming video of the young Piano speaking about the design in heavily accented French. When the Pompidou was completed, the building was not considered perfect by any means. But it catapulted its architects to grander possibilities, allowing them to refine their philosophies and practices in ways that have meaningfully influenced the profession. As one of the rare recent large commissions awarded via open competition, the Pompidou-Metz will hopefully give Ban a similar chance to expand on his refreshingly original ecologically- and socially minded ideas. □



Circle no. 77 or http://architect.hotims.com

→SCREEN GRAB

archigram.westminster.ac.uk

THE ARCHIGRAM ARCHIVAL PROJECT CUES UP THE '60S POP GROUP'S HITS AND B-SIDES.



TEXT BY MIMI ZEIGER
PHOTO BY JOHN WRIGHT

Thanks to the diligence of Archigram member (and de facto archivist) **Dennis Crompton**, the Archigram Archival Project site includes a number of previously unpublished images. "I used to regularly collect this stuff out of the waste bin," he says.

ARCHIGRAM HAS ALWAYS been more rock star than starchitect. The six-member group—Warren Chalk, Peter Cook, Dennis Crompton, David Greene, Ron Herron, and Michael Webb—produced some of the most revolutionary designs of the 1960s and early 1970s. Drawing on consumer culture as well as new technologies, their self-published pamphlets challenged stuffy high Modernism and the architectural status quo by envisioning, among other fantastical things, walking cities. As the bad boys of pop architecture, they've made giddy fans out of students, academics, and practitioners over the years. Yet it was still a surprise when the Archigram Archival Project, an online visual database of the group's work that launched in April, immediately went viral, racking up 100,000 page views in its first week.

Conceived when the firm received the 2002 Royal Gold Medal from the Royal Institute of British Architects, the site was developed by a team from the University of Westminster's research center for experimental practice in the Department of Architecture. "Archigram's work is not finite," says project manager Clare Hamman. "We designed a site that could grow, so that extra things—like films or all of Ron Herron's boxes of ephemera—could be added later."

Yet the site is already a research gold mine. In addition to some 10,000 images, it includes collaborator bios, cross-linked to projects, and long interviews with Crompton about each of the nine (and a half) magazines Archigram produced between 1961 and 1974. (The holder of Archigram's archives, Crompton worked with the Westminster team to make the site a reality.) The trove seems to offer up endless new material for analysis: sketches from the "Living City" exhibition, for example, or a master-planning proposal for a London shopping center. Finding evidence of visionary and mundane projects in the archive underscores the fact that while Archigram is best known for whimsy, its members were, and are, quite serious about architecture.

"I think we were curious about everything," Crompton says. "What has become apparent in the last 10 to 15 years," he adds, "is that we've become the subject of legitimate academic study." □

LINKS

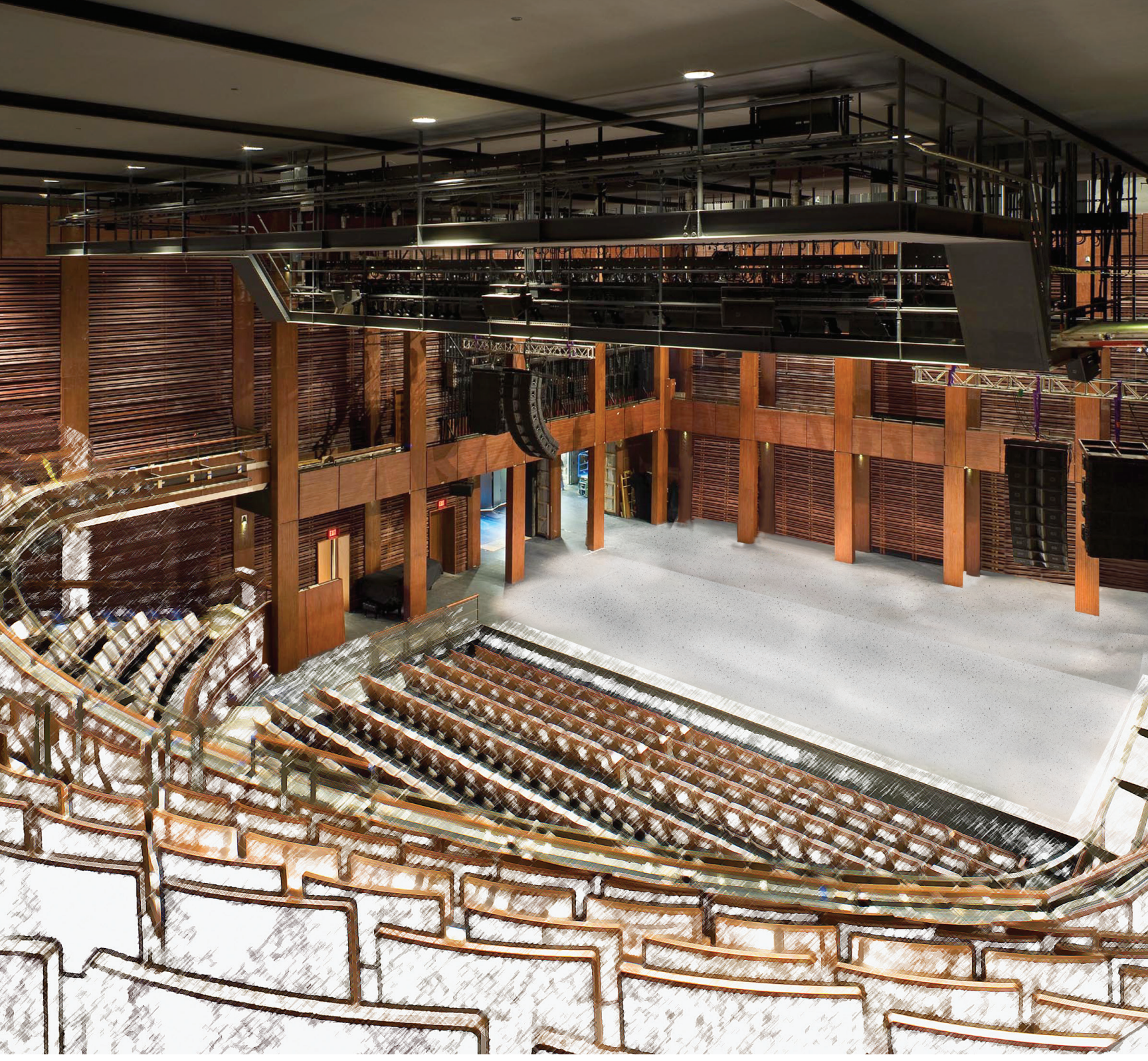
glasshouseconversations.org
Philip Johnson and his partner, David Whitney, regularly invited designers, artists, and intellectuals to their New Canaan, Conn., home as part of an ongoing conversational salon. Now that tradition continues online at The Glass House Conversations, organized by the Philip Johnson Glass House. Each Monday, a host—generally, someone well known to the arts community—poses a question, and site visitors have five days to offer responses. Registration is required.

bestpracticesconstructionlaw.com
A blog by Smith Cashion & Orr lawyer Matthew DeVries, Best Practices Construction Law offers legal analysis and commentary on such issues as sustainable construction, BIM, project management, and dispute resolution.

nytimes.com
It's a conundrum: Most houses have living rooms, yet very little living actually occurs there. In a *New York Times* Opinionator column, Joan DeJean, author of *The Age of Comfort: When Paris Discovered Casual—and the Modern Home Began*, traces the social and design history of these ill-used spaces back to the late 17th century, "when architects first considered what 'living' in the home meant." • *nyti.ms/d4n6My*

spectalk.com
MasterSpec publisher Arcom has launched a blog, SpecTalk. Expect to find weekly posts explaining updates to MasterSpec sections, technical tips, company news, and more.

flickr.com
In connection with its latest exhibit, "Lego Architecture: Towering Ambition"—which runs through Sept. 5, 2011—the National Building Museum has created a Flickr group where everyone is invited to post pictures of their own, or others', creations using the popular plastic blocks. Our favorites so far: DecoJim's replica of Albert Kahn Associates' Fisher Building and suspensionstayed's 32-foot-long suspension bridge. Impressive! • *bit.ly/96q5t9*



Harman Center for the Arts, Washington, DC

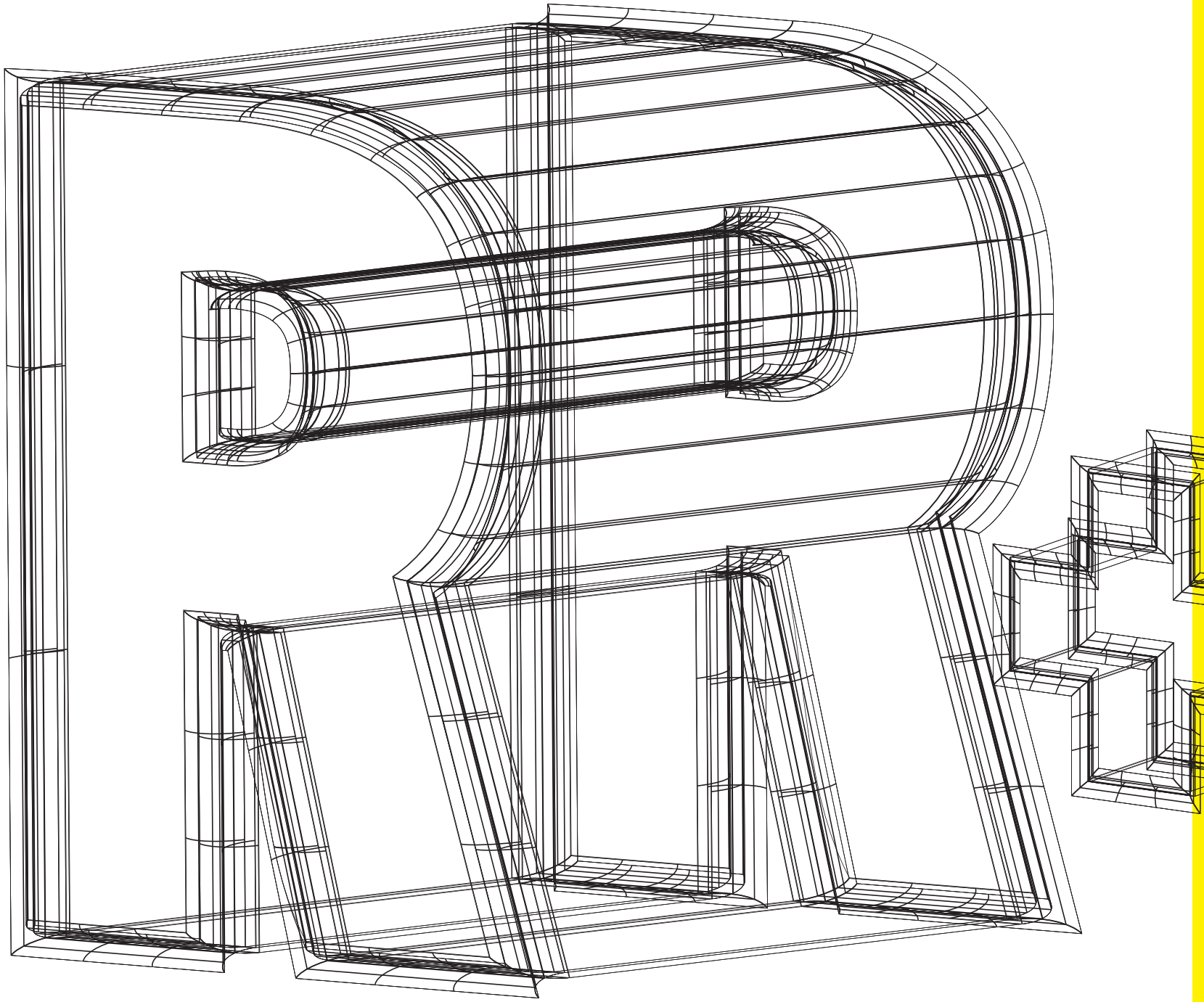
Bring Your Vision To Life.

Partner with a CTS Audiovisual Professional.

Great spaces are created by outstanding architects. The most spectacular spaces in the world are designed by architects who involve Certified Technology Specialists early in the design process. Audiovisual professionals with the CTS credential work with architects and acousticians to make sure each space functions as well as it looks. Disguised behind the scenes is one of the most flexible audiovisual systems in the world.

To collaborate with a CTS or to learn more about this award-winning project, visit www.ctsforav.com.

Circle no. 198 or http://architect.hotims.com

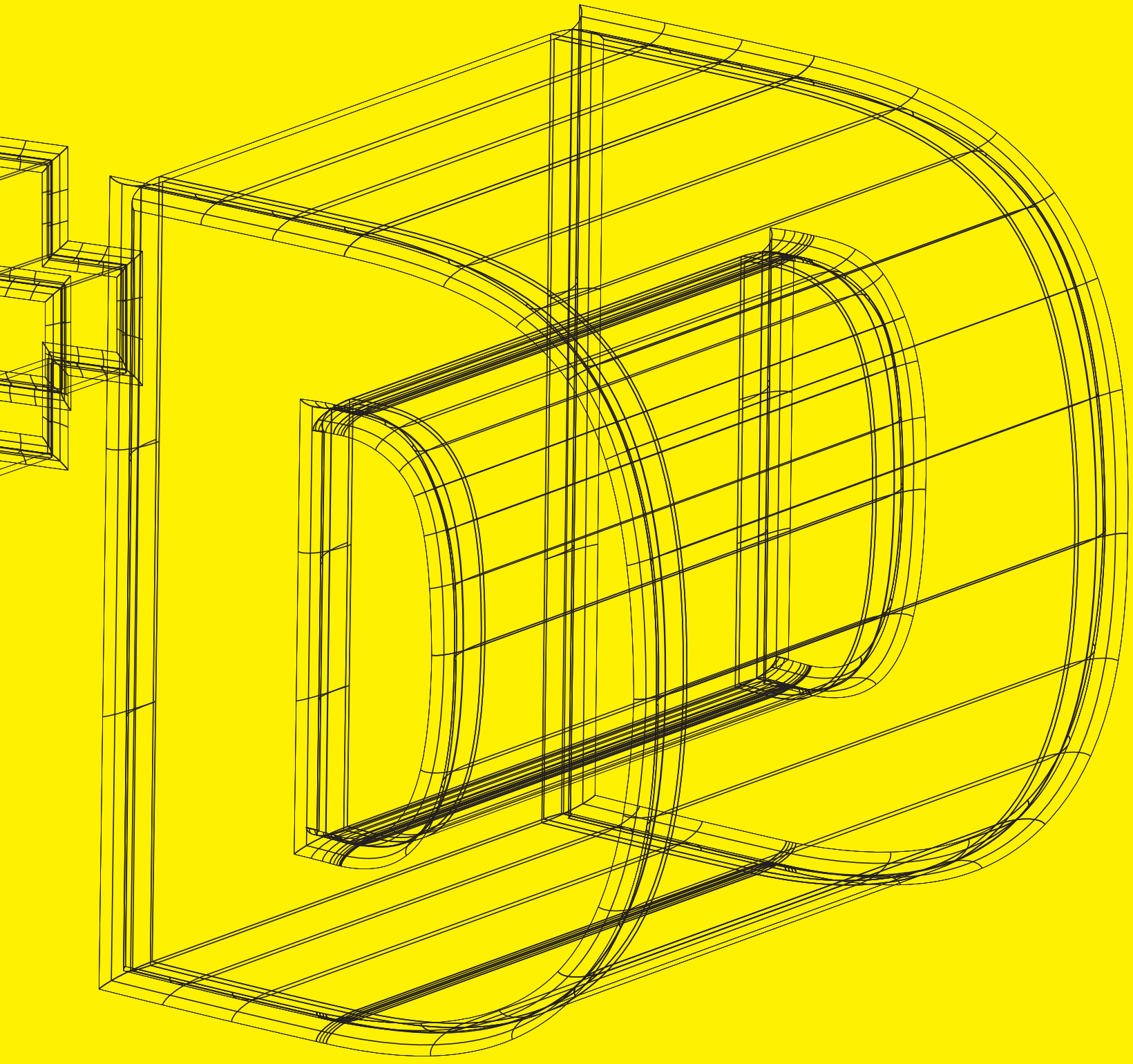


RESEARCH

R+D AWARDS →

ARGUABLY, RESEARCH AND DEVELOPMENT have always been defining principles in architecture. But savvy clients expect buildings to be ever-smarter and more efficient, and architects are continually pushing materials beyond their known limits to reimagine the very nature of shelter. That is why the jury of this year's R+D Awards—Frank Barkow, Cristobal Correa, and Jenny Wu (see page 80)—demanded more from the more than 100 projects in the entry pool. Their valuation broke down into three criteria: proof of performance, aesthetics, and evidence of progressive thinking (or, as Wu said, proof of "how it does what's been done before, differently"). The final collection of winners—seven awards and four citations—is wide-ranging: A decarbonization plan for Chicago's central Loop; beautifully formed pavilions made from metal and bent wood; bollards that protect buildings without detracting from the urban streetscape; and demountable drywall tape to reduce waste in interior fit-outs, to name a few. A diverse selection, and representative of the innovative thinking that defines the current landscape of architecture. KATIE GERFEN

DEVELOPMENT



AWARD

Digital Steam-Bending: Developing a Parametrically Adaptable Wishbone Structural System

Final Research Team Steven Mankouche and Joshua Bard (principal investigators); Matthew Schulte (research assistant)
Funding Office of the Vice Provost of Research, University of Michigan

Starting Research Team Steven Mankouche, Joshua Bard, Tsz Yan Ng (principal investigators); Matthew Schulte, Sarah Dean, Richard Tursky, and Luke Somo (research assistants)
Funding Research Through Making Grant, A. Alfred Taubman College of Architecture and Urban Planning, University of Michigan

(project credits continued on page 82)

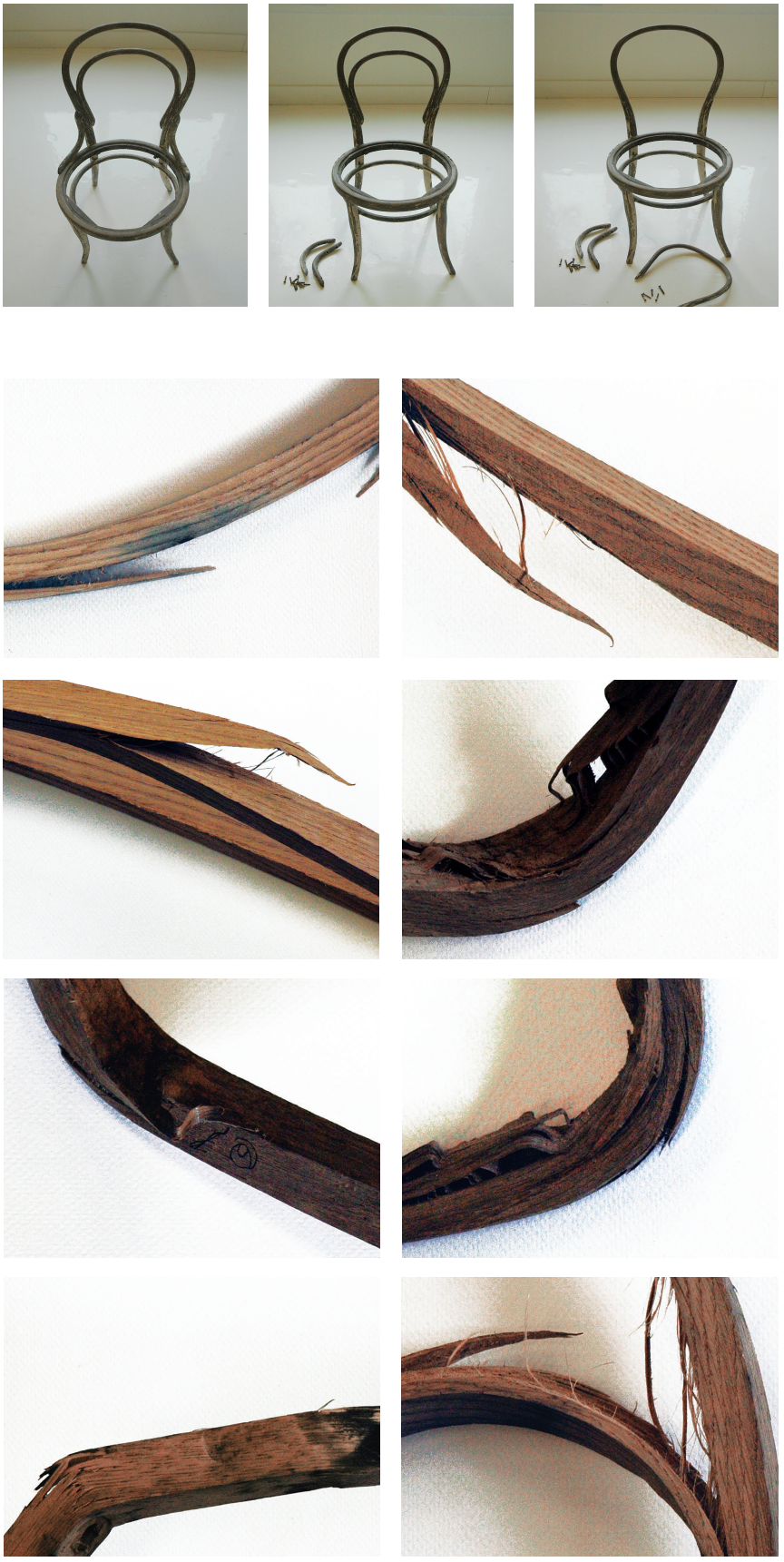
THONET, AALTO, EAMES—these are some of the names that come to mind if you think of bending wood into complex forms through the application of steam. A research group at the University of Michigan decided to revisit this 19th century technique with 21st century digital tools. Using parametric modeling coupled with CNC technology, the group pushed the material to its limits, using a series of failure points as the basis for generating form. The group designed and tested two structural systems, one based on Michael Thonet's iconic No. 14 bistro chair, and another based on a wishbone pattern found in the canoe construction techniques of the Great Lakes region. This wishbone system, now being considered for movable pavilion structures, has been built through to full-scale prototypes.

The research process impressed the jury, especially Jenny Wu: "There's something nice in taking a known process and developing it and understanding it as a geometrical construct." And the group did so using a combination of new and old technologies, discovering that the failures of the physical prototypes informed the parametic models, which improved the next physical models, and so on, until the final form was achieved.

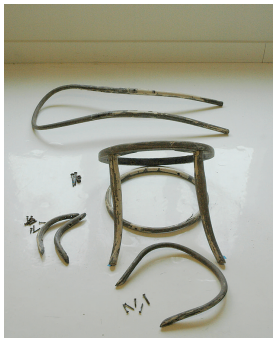
More than just the formal research, the jury appreciated the team's willingness to push the material as far as (or farther than) it can go, only to use those failures to inform the final design of the curvaceous structural members. Each wishbone is made from a piece of white oak that is formed over a barrel-shaped mold without a steel strap or additional supports. "You know, wood doesn't like to do that," Wu said. "And I think the detail is pretty elegant." The team determined that each piece can be bent to a radius of 1.6 meters before failure. At that point, the arches are joined together to form a vaulted structure. The prototypes were analyzed with structural modeling software to determine if they can withstand both dead and live loads, and a skin is now in development.

Juror Frank Barkow liked the idea of using current technology to dialogue with the past: "The idea is interesting: digitally being able to revisit the … [Thonet] project, in a way, of how to modify plywood or wood."

KATIE GERFEN

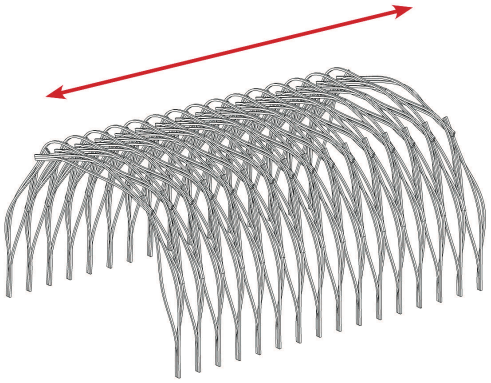


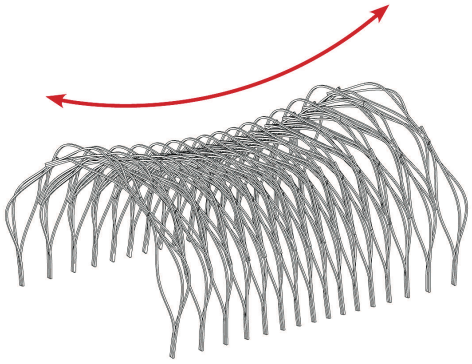
↑ Failures
Tests of various regional wood species—including white ash and white cedar—and samples of wood species from further afield, suggested that white oak was the best option for creating the arcing wishbone structural system because of its superior flexibility and weather resistance. But this realization did not come without several failures along the way. Even after white oak was selected, the team continued to move back and forth between digital parametric models and physical models, using the breaking point of the wood to help develop the extent of the curve for the arched structural members.

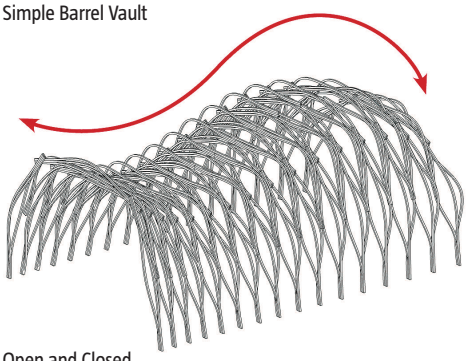


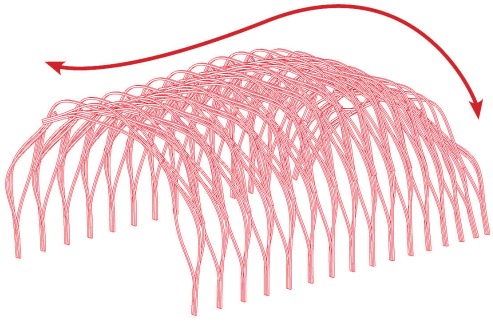


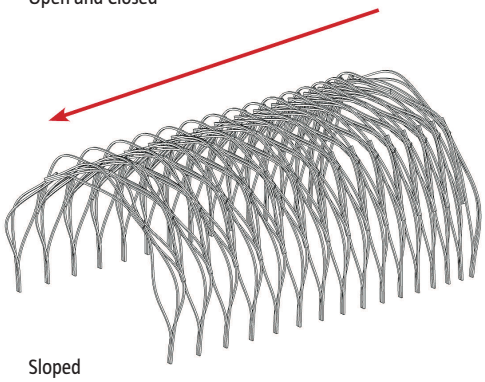
← Inspiration
While developing their structural systems, the team looked at two steam-bent antecedents: Thonet's No. 14 chair and the bent-wood snowshoes and canoes made by craftsmen in the Great Lakes region. To fully understand the geometries and the bending required, a Thonet chair was deconstructed to its most basic parts.

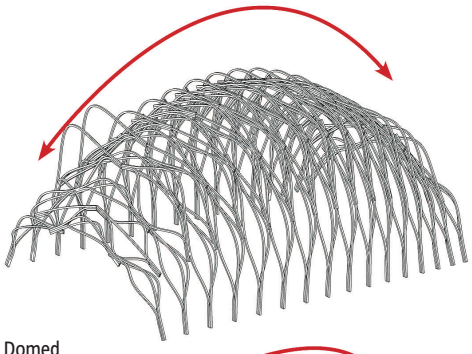

Simple Barrel Vault

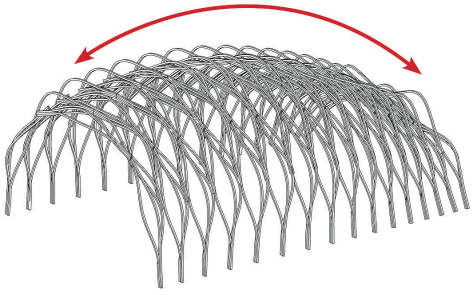

Saddle

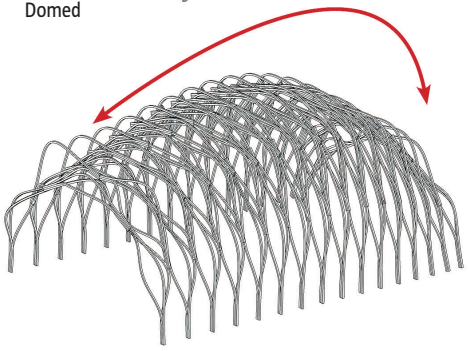

Open and Closed


Open One End, Closed the Other


Sloped


Domed

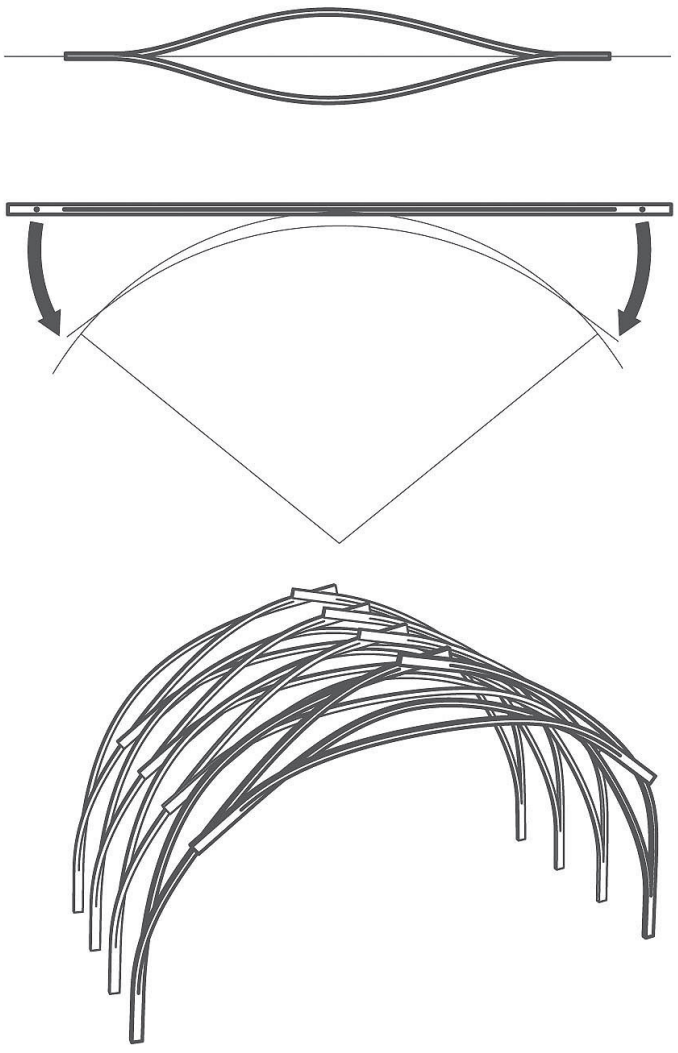

Slightly Open One End, Closed the Other


Slightly Closed Both Ends

← Parametrically Controlled Trusses
Several parametric models were created to explore how the severity of the curves of the individual structural components would affect the overall geometry. These models were combined with lessons learned from physical modeling to determine that the best form for the pavilion would be open on one end and closed on the other (shown in red). The parametric model was then run through a series of structural analyses that tested moderate loading, pre-failure, and failure loading to determine how the structure would perform under heavy wind loads.

Prototyping →
Once testing was completed and the structural system determined, the team built a full-scale prototype of one half of the potentially fully arched structure. In this partial form, the system can serve as a brise-soleil for an existing building.

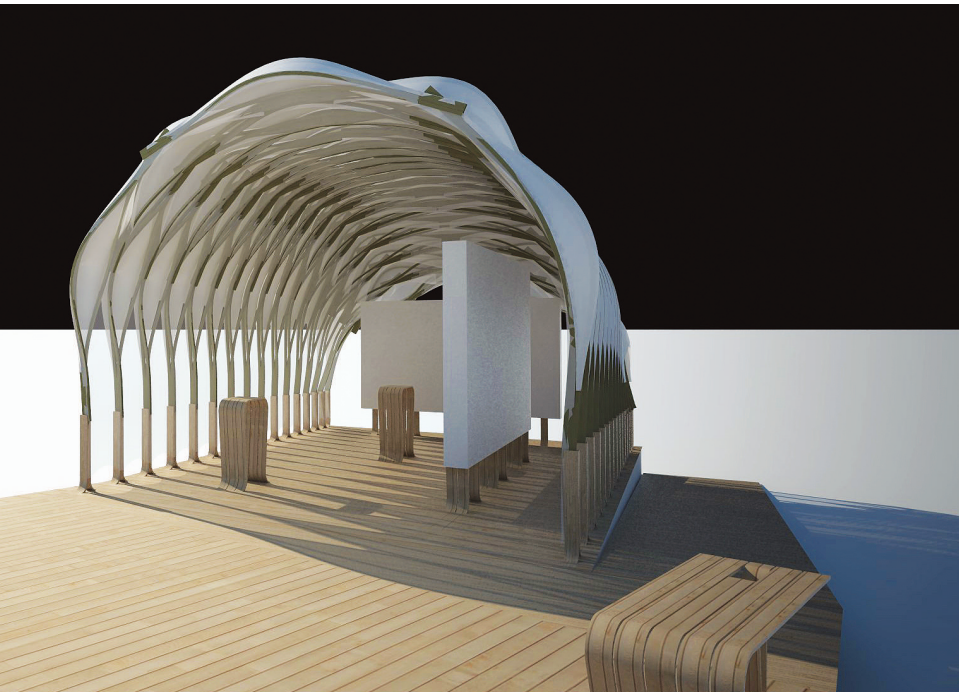




↑ Wishbone Structure
The team determined that to create the wishbone structure it would have to make each individual piece of white oak achieve a three-axis bend. Each piece of wood is split down the middle, nearly to the ends, then steamed open to form the initial shape, and bent over a barrel-shaped jig developed through parametric modeling. Each piece can be bent to a 1.6-meter radius before breaking. Pieces are then joined together to form the full arch of the structural system.







← Potential Uses

Wood is biodegradable, so it can either be composted or used as fuel for wood-burning stoves or heaters once a structure has reached its end of life—but the complexities of the system are not a great fit for rapidly deployable structures such as disaster housing. However, the team is exploring the idea of using the system for temporary civic buildings, such as outdoor galleries. Covering the structure with a translucent fabric would allow daylight to filter in and create a sheltered space to view artwork.

AWARD

R-House

Architect Della Valle Bernheimer, Brooklyn, N.Y., and Architecture Research Office, New York. Della Valle Bernheimer team: Andrew Bernheimer (principal); Jared Della Valle (principal); Garrick Jones (studio director and project manager); Lara Shihab-Eldin, Janine Soper (designers).
Architecture Research Office team: Adam Yarinsky (principal); Stephen Cassell (principal); Megumi Tamanaha (associate); Melissa Eckerman, Jane Lea, Neil Patel (designers)

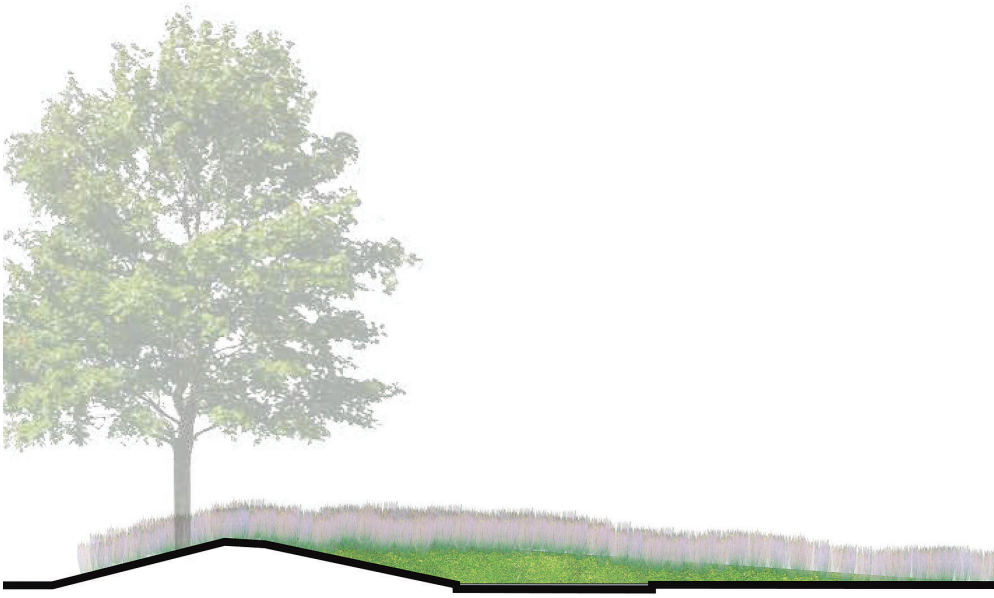
(project credits continued on page 82)

BUILT ON A NARROW, deep lot in the historic Near Westside neighborhood of Syracuse, N.Y., the compact R-House offers a prototype for extremely low-energy housing that's also affordable and adaptable to different family configurations. The 1,100-square-foot house meets Germany's ultralow-energy Passivhaus standard on account of its airtight construction, superior insulation, efficient heating and passive cooling, and southern-facing windows, which optimize solar gain. Heating the R-House requires the same amount of energy as using a hairdryer.

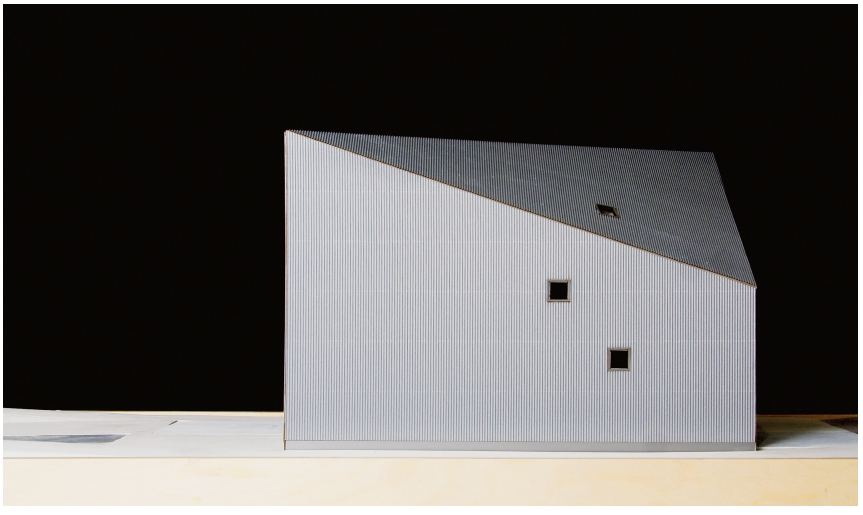
Taking a cue from the surrounding houses, Della Valle Bernheimer and Architecture Research Office put a slight torque on a conventional gabled roof, producing a simple, folded form that's progressive, yet in keeping with its neighbors. The house makes use of common but carefully detailed materials: corrugated aluminum on the roof and exterior walls; concrete, wood, and translucent polycarbonate panels (these serve as a luminous boundary between private and more public spaces within the house) inside. The two-bedroom-plus-study base plan can be adapted to three bedrooms, or one bedroom plus an upstairs rental. Owners can even extend the second story—truncated to allow for a double-height space on the south side of the house—if they wish to add a fourth bedroom.

"You can actually change the distribution [of spaces] in the house, which is kind of nice," remarked juror Cristobal Correa. "It says, 'This provides economic stability as family units change over time.'" Correa noted that the design was likely "quite radical for Syracuse … And it seems like a pleasant little house to live in. It's a nice scale."

Juror Frank Barkow was impressed by the integration of the systems with the design approach. "It just seemed like it had all the systems in place. It also had … a certain modesty about it, that you could produce a decent house that was probably, I'm guessing, $100,000 [or] $150,000." AMANDA KOLSON HURLEY







↑ Form and Efficiency
Developed by the design team as a simple folded surface, the form of the R-House can be seen as a (literal) twist on the traditional gabled roof: The architects set the gable askew and tucked small front and back porches beneath it. Energy-efficient features are integrated into the house's design. Ample windows with triple-pane, double-low-E glazing on the south face (top) optimize solar gain, while external shading and an operable skylight aid passive cooling. Heating demand is met entirely by warming the required fresh air supply. The house's compact form enhances its energy performance, which meets Germany's stringent Passivhaus standard.

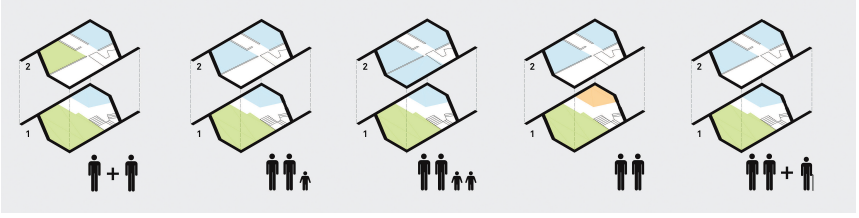


↑ Site

The R-House is grounded in its site—the landscape was formed from earth excavated for the house's foundation. A berm planted with a native grass encloses the backyard, and a paved terrace allows space for a kitchen garden. In winter months, a slight depression in the backyard can be flooded and frozen for skating. And since many lots in Syracuse's Near Westside neighborhood (where the prototype will be located) are similarly sized, this site configuration can be deployed easily throughout the area.

↓ Flexible Configuration

The house's base floor plan (second from right) can be adapted in multiple ways. An owner can live on the first floor and rent out the upstairs (far left); turn the first-floor office into a child's bedroom (second from left); add a fourth bedroom, on the second floor (middle); or use the office to accommodate extended family (right).

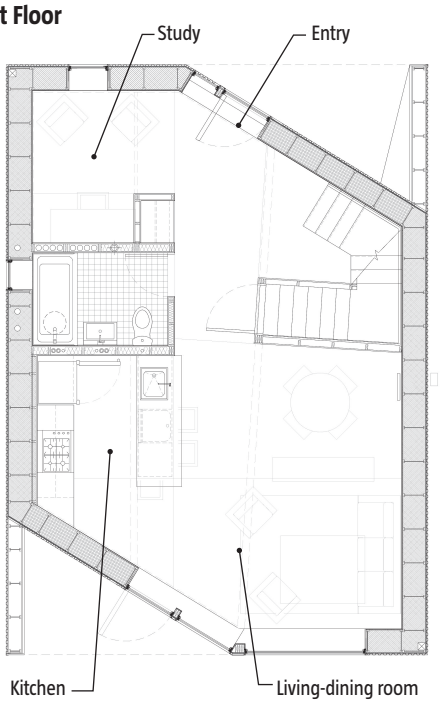




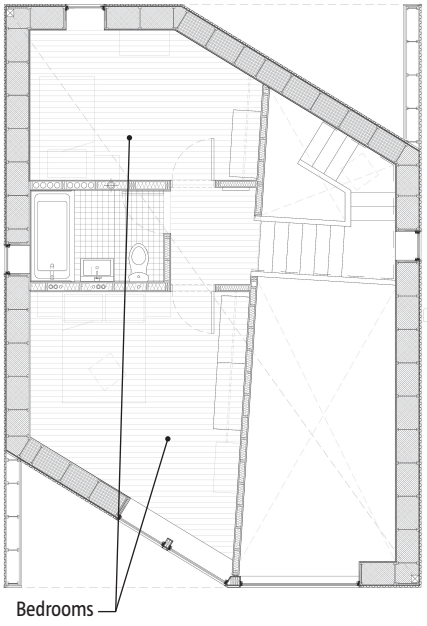
↑ Context

With its gable-inspired folding roof, the R-House nods to—but doesn't mimic—the appearance and scale of neighboring houses. Like many older houses in Syracuse, the R-House has a front porch, tucked under the roof beside the west wall. Corrugated aluminum on the roof and walls reflects light, counteracting the gray of winter.

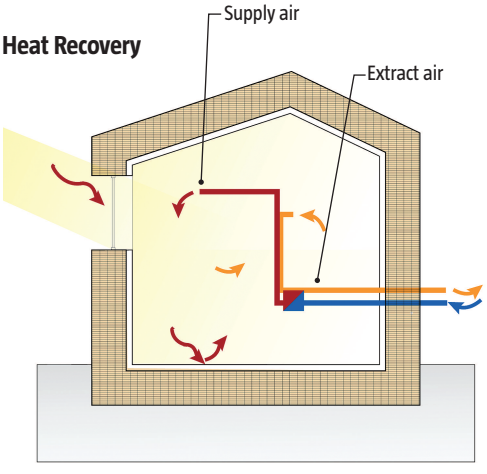
First Floor



Second Floor



Heat Recovery



AWARD

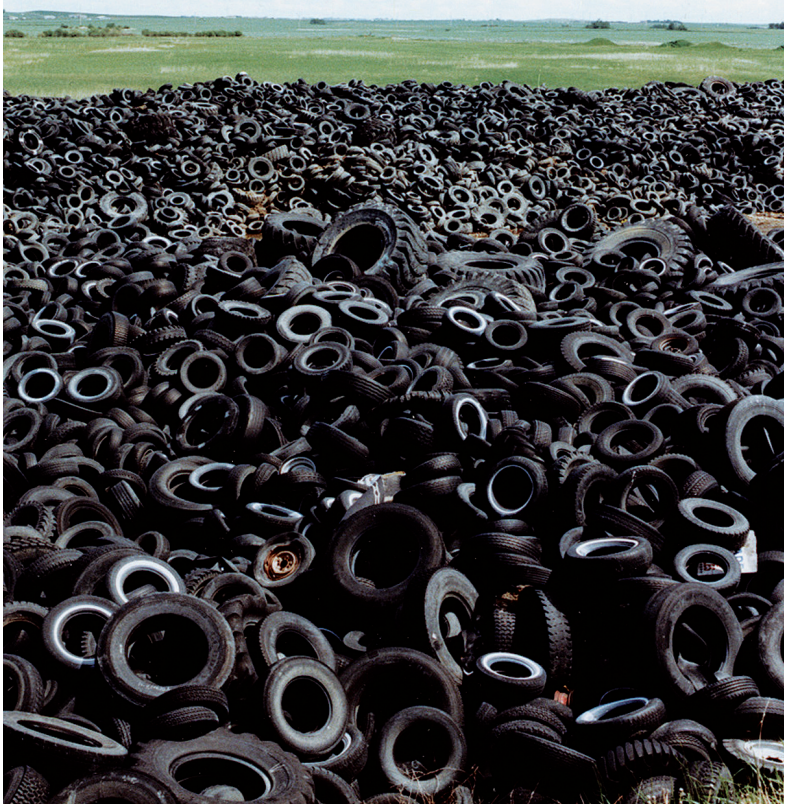
RUBBiSH (Recycled Rubber Sinks)

Designer Minarc, Santa Monica, Calif.—Erla Dögg Ingjaldsdóttir, Tryggvi Thorsteinsson

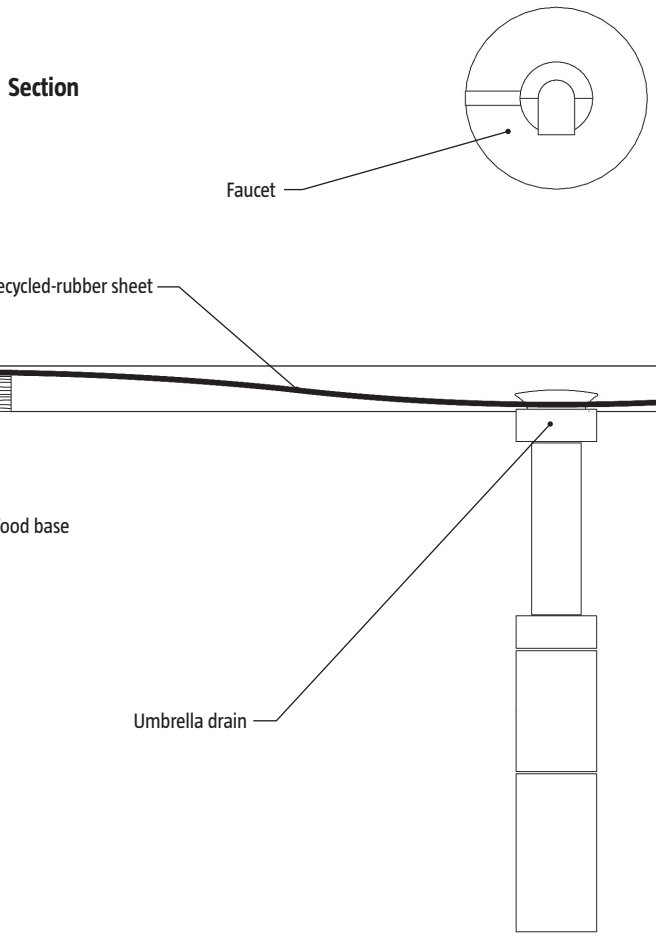
IN THE WORLD of green products, worth is usually measured by a series of acronyms—VOCs, IAQ, FSC, etc.—or by percentage of recycled content, and even that is subdivided into categories: pre-consumer, postindustrial, and the most coveted, post-consumer. So it is refreshing to see RUBBiSH, which has a pedigree so pure that no acronyms are necessary. Our car-centric culture has left so many tires in the trash piles of the U.S. that the team at Santa Monica, Calif.–based architecture firm Minarc decided to turn them into something useful: bathroom sinks.

The rubber from the tires is melted down and cleansed of debris, and the tiny inherent metal fibers that give a tire its road resistance are then formed into a sheet. This sheet is stretched over a base frame—made of wood, metal, or any other material out of which bathroom furniture can be fashioned—and anchored down by the drain collar. This creates a shallow-sloped surface for water to be siphoned away, but not a clunky profile; in fact, the material used is so minimal that, the manufacturer claims, the sinks use less than one pound of rubber. Two options are available, the most basic being the 1/8-inch-thick sheet of rubber adhered directly to the cabinet underneath. The other is a framed option, in which the sheet of rubber is sandwiched between two sheets of aluminum around the edges. The firm is in the process of developing two standard sizes for commercial distribution: a single sink at 36 inches wide and a double basin measuring 5 feet across.

For juror Frank Barkow, the materials innovation was intriguing. "We've used these recycled tires [at Barkow Leibinger Architekten], but it usually comes in a plate material," he said. "I've never seen it molded like this before." But perhaps the most ringing endorsement came from juror Cristobal Correa, who said, "I want one in my bathroom." K.G.



↑ Tires
RUBBiSH uses rubber derived entirely from recycled tires. The rubber is melted, cleaned of impurities and particulates, and then given a new life as a sink.



↑ Surface
The shallow basin of the sink is formed from a sheet of rubber stretched down and held in place by the drain collar.



← Profile
The thin profile of the RUBBiSH sink means that the overall weight of the rubber sink surface is less than a pound, so the custom support structure can be lightweight.

AWARD

Chicago Central Area Decarbonization Plan

Architect Adrian Smith + Gordon Gill Architecture, Chicago—Adrian Smith, Gordon Gill, Robert Forest (partners); Gail Borthwick, Sara Beardsley (senior architects); Jeffrey Boyer, Brian M. Jack, Carrie Neill, Kevin Nance, Daniel Segraves, Gabriel Bunea, Hayes Brister, Jason Smith, Rachel Bennett, Robert Perry, Silviu Petrea, Tyler Noblin, Christopher Drew, Peter J. Kindel (project team)

(project credits continued on page 82)





BY NOW, MOST ARCHITECTS realize that in order to mitigate global warming, we need not only build more efficient new buildings, but also retrofit the existing building stock so that it meets modern standards of efficiency. But if that retrofitting is done in a scattershot way, who's to say what progress has been made?

The team at Adrian Smith + Gordon Gill Architecture, known for net-zero and positive energy designs, lent its expertise to its hometown of Chicago in an effort to help the city meet its carbon reduction goals, which include 25 percent reduction in carbon emissions below 1990 levels by 2020 and 100 percent reduction in carbon emissions for new and renovated buildings by 2030, in accordance with the 2030 Challenge.

The team created a 3D model of more than 550 downtown buildings, embedding information such as energy consumption, size, age, use, and estimated carbon footprint. This model helps determine which buildings need to be renovated to be brought up to standard, so that they can, potentially, gain new life as reprogrammed structures. Then the city can use the existing building stock rather than new construction to answer demand for more space. "I like the idea of operating on the scale of an entire city, and how you might be able to, in a piecemeal way, remedy" the carbon emissions problem, juror Frank Barkow said.

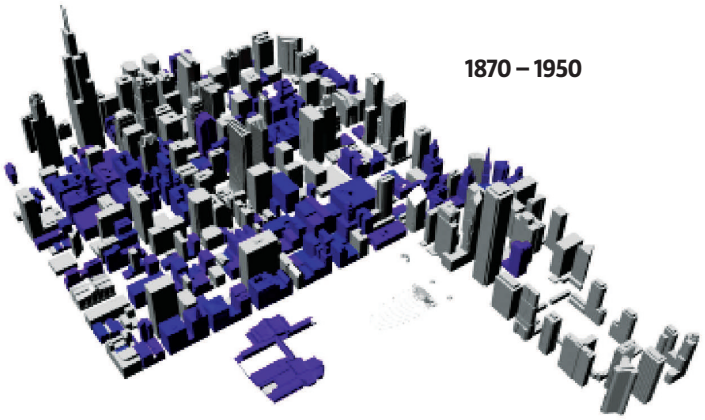
And the plan does not stop with buildings analysis. The architects propose a series of new infrastructure systems, reducing vehicular traffic to cut down on emissions, creating a series of new "pedways" (pedestrian walkways, both above and below ground, the latter to be used during Chicago's harsh winters), and more. There is even a recommendation to turn the Loop's existing underground tunnels into a pneumatic waste-disposal system that would handle trash without requiring gas-guzzling trucks to collect it.

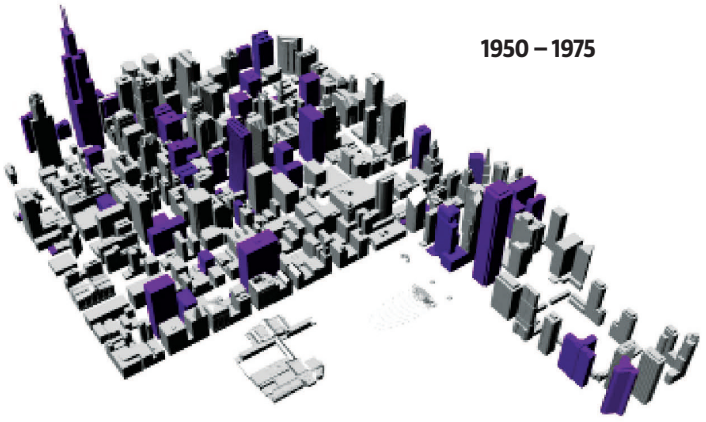
"It [the plan] connects everybody together, and it creates this holistic idea about a neighborhood," juror Cristobal Correa said. "In terms of trying to find urban solutions to urban problems that relate to sustainability, I think it's really interesting." Our jury was not the only group to think so: Discussions are already under way with the city to discuss the adoption of some of the firm's proposals, as well as a possible implementation strategy and schedule. K.G.

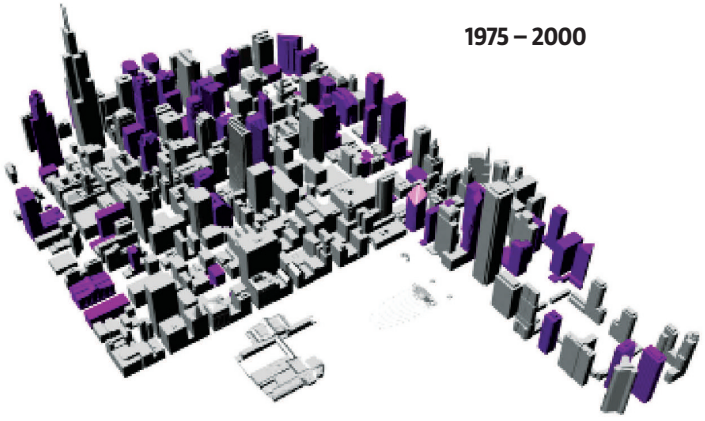


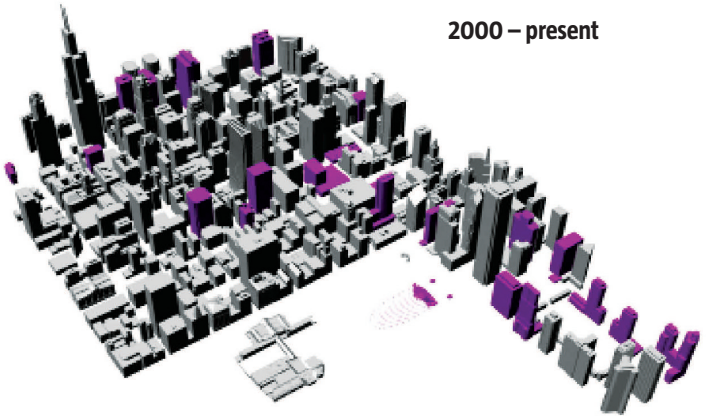
← Carbon Emissions
The team compiled a database of information that helped determine carbon emissions for buildings in the Chicago Loop. These emissions can now be visualized on a color spectrum from red (very high emissions) to dark green (low emissions).

Age of the Building Stock →
One of the information factors collected for each building was age: not to determine whether structures need to be torn down, but rather to investigate possibilities for reuse. Office buildings built prior to 1950 could potentially be reused as residential towers. As for buildings from the second half of the last century, these inefficient air-conditioned boxes are most likely in need of efficiency upgrades.

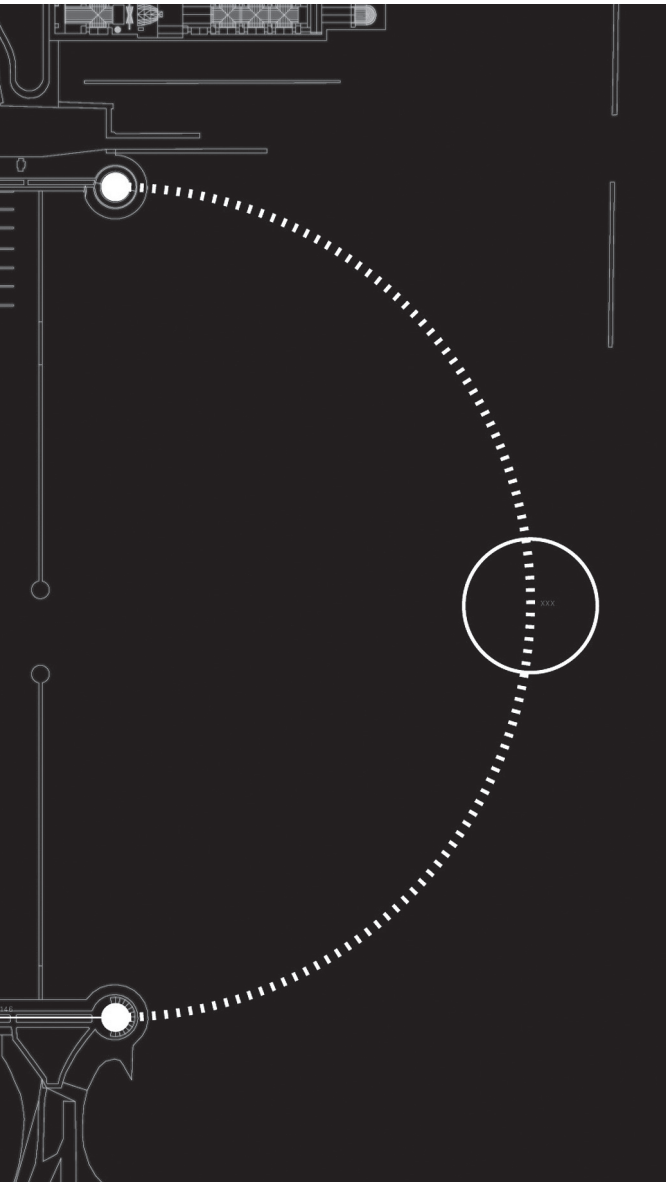


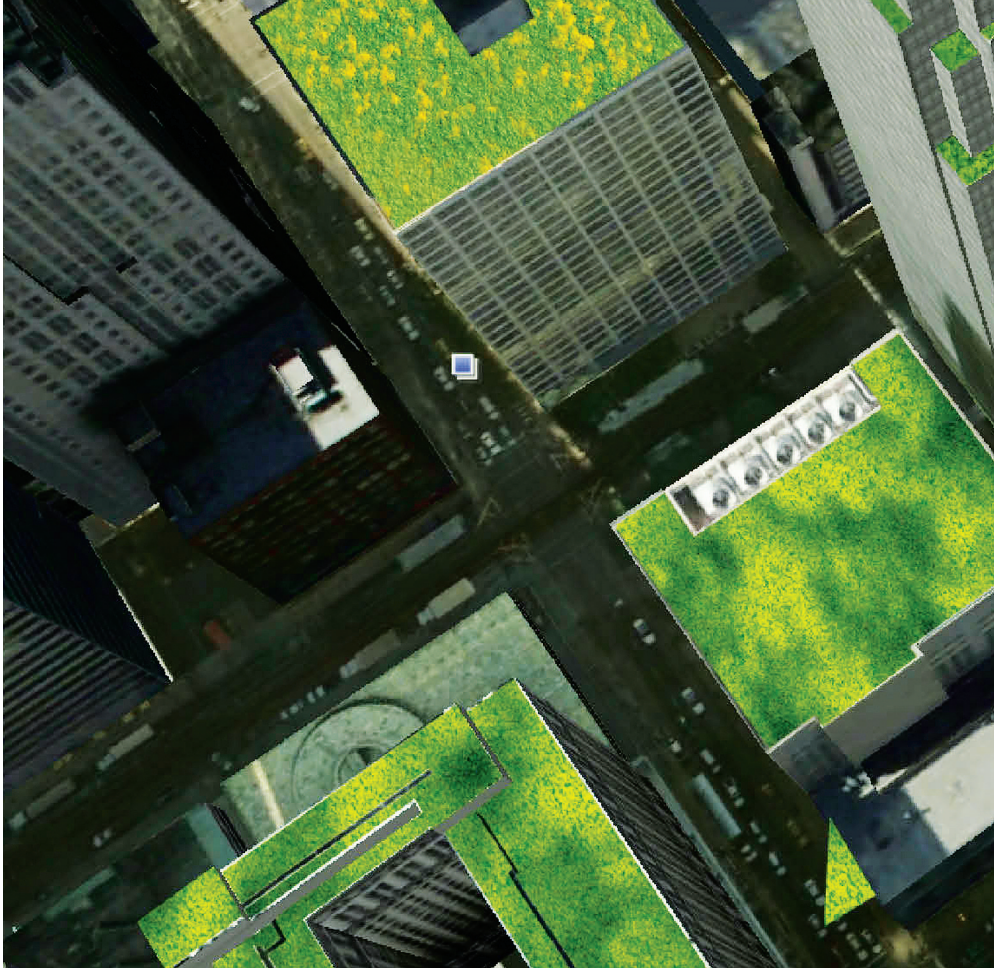






↓ The Area
This map of the Loop does more than outline streets; it highlights a proposed system of pedways to encourage walking. This over- and underground system would include access to public transit hubs and a green corridor.





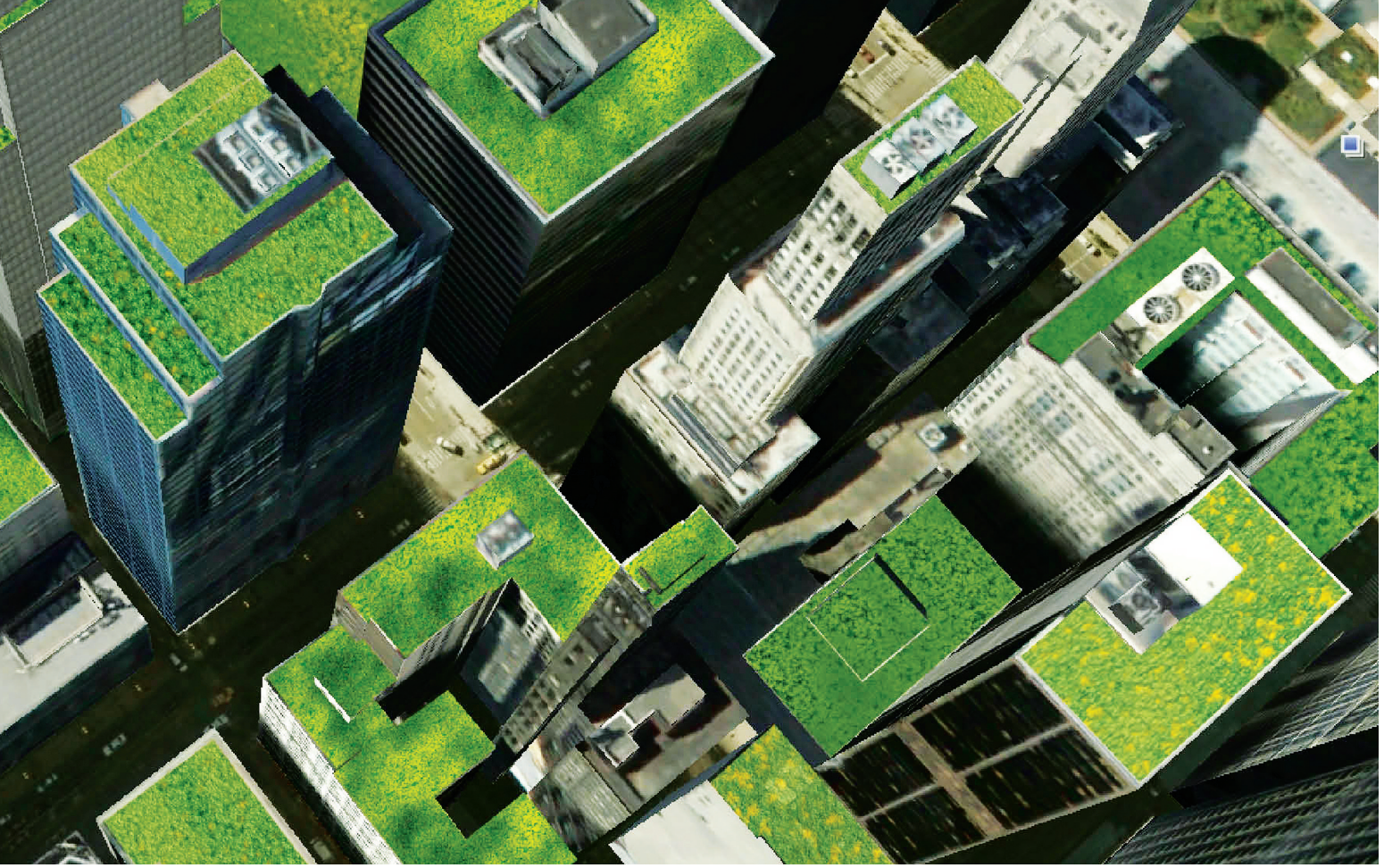
Green Roofs →

Chicago is already known for having a lot of green roofs, and the team suggests taking that to the next level: greening every roof surface possible. Because the typical Loop building is a tall tower with a relatively small footprint, there isn't enough room to install photovoltaics that could make a dent in energy usage. So reducing heat island effects to relieve the loads on air-conditioning systems is a more effective use of roof space.

↓ More Walking

To reduce carbon emissions from cars, the team encourages pedestrian traffic. Probably the most significant part of the plan is to restrict vehicular traffic on Monroe Street (one of the Loop's main east-west thoroughfares) to two lanes, reserving the other half of the street for a public greenway with pedestrian-only access.







← Use All Available Space
The plan doesn't call for green roofs just to blanket the city in sedum. There are other ways to put that new space to good use. In this example, a school (complete with outdoor play areas) occupies one rooftop—suggesting a new way to develop a dense downtown district.

AWARD

North House: Responsive Envelope Prototyping

Architect RVTR Architects, Toronto—Kathy Velikov, Geoffrey Thün, Colin Ripley, Zain Abuseir, Matt Storus

Client University of Waterloo

Structural Blackwell Bowick Partnership—David Bowick, Cory Zurell

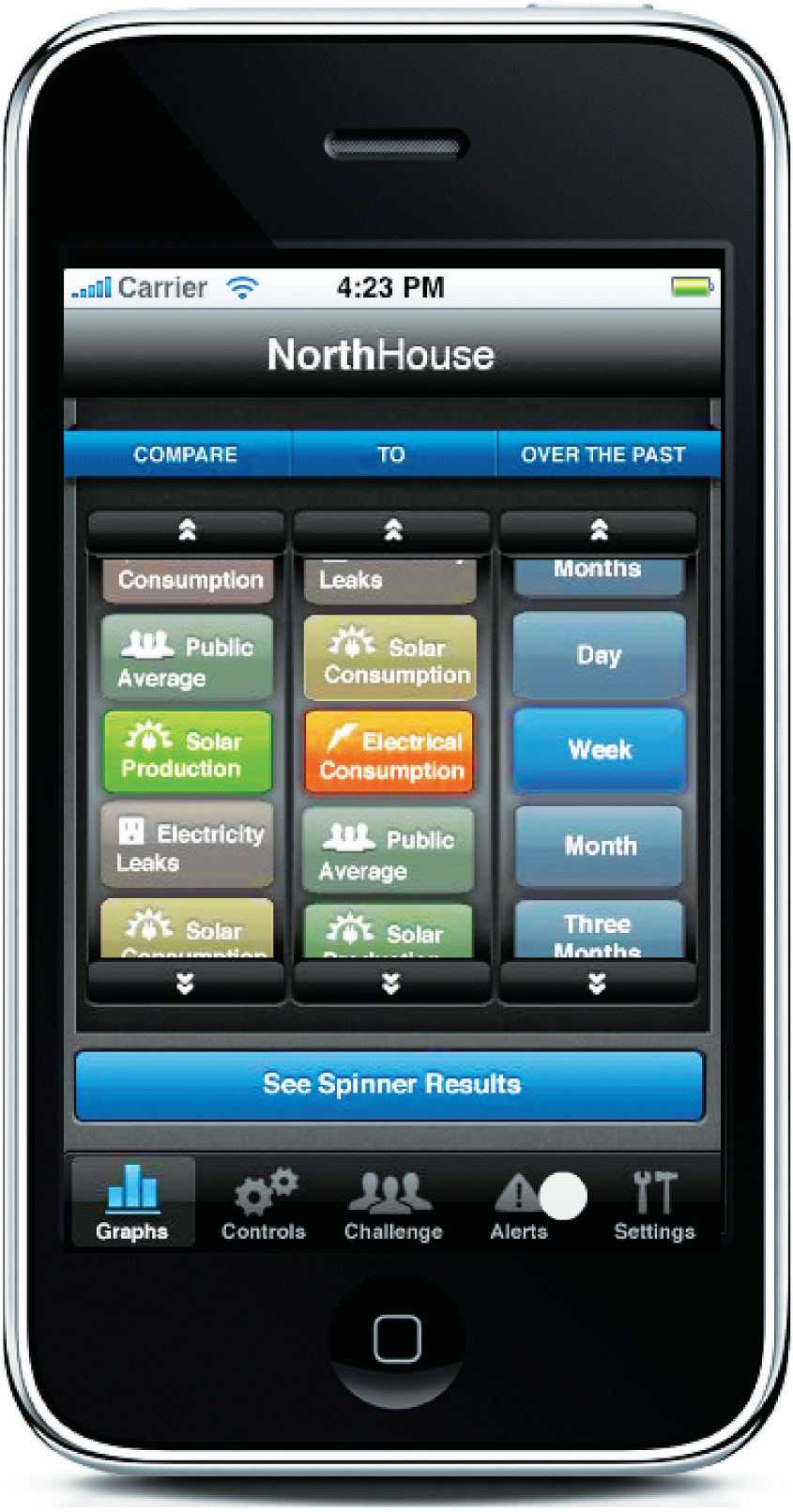
(project credits, including student teams, continued on page 82)

DESIGNED AND BUILT for the 2009 U.S. Department of Energy's Solar Decathlon, this solar-powered, 800-square-foot prototype house is tailor-made for northern climates. The project combines a responsive louver and building-integrated solar-panel skin with a savvy interior that contributes to the overall building performance.

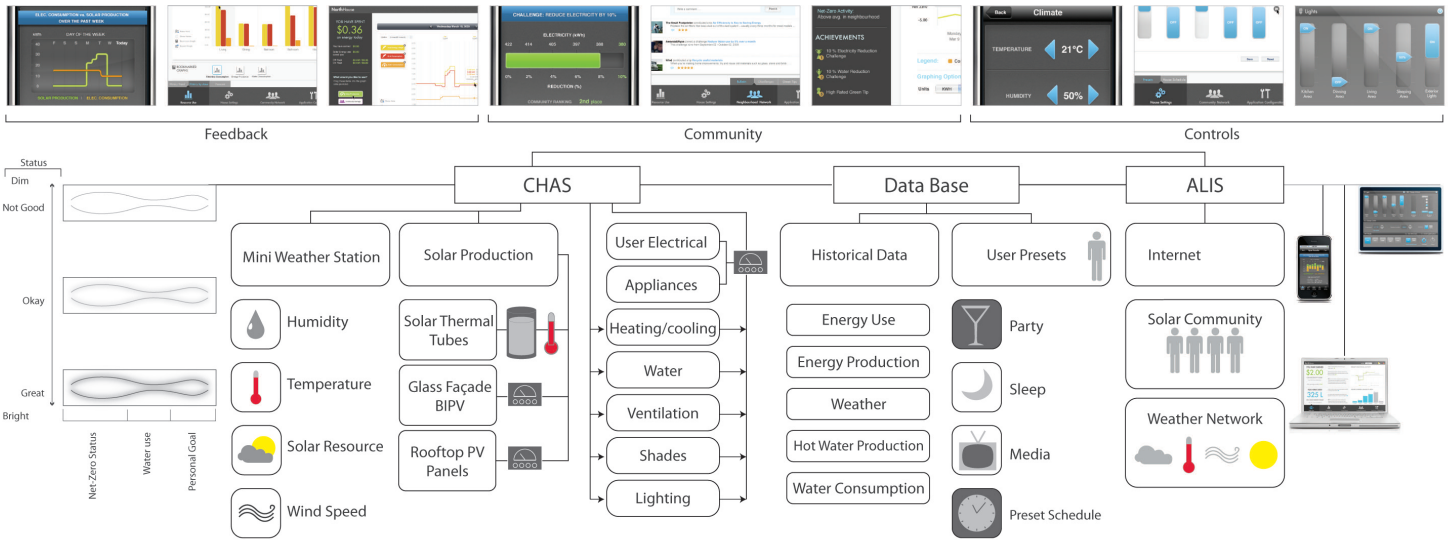
Any architect pursuing LEED points knows that the actions of the occupant can have more impact on a building's energy performance than any single technology, so the student design team from the University of Waterloo concentrated on developing a building management system—called the Adaptive Living Interface System (ALIS)—that is both easy to use and informative. The program collects data and monitors energy use and production, water use, and indoor and outdoor environmental conditions. This information can be accessed via a Web-based application that parses the data and can track patterns over months or years.

Since changes can be made and monitored in real time, touchscreen panels are integrated throughout the house and translate information into a dollar figure of savings or expenditures for the day. And to make monitoring simple, the design team based the system on open-source calendar and social networking softwares that are easy to use and require no new learned skills. It was this level of integration that intrigued juror Cristobal Correa. "They looked at all the systems and they talk about the user. It's very important for these things to actually interact with the user—this house is like a living thing," he said.

Energy usage is also minimized by the smart interior design, which incorporates elements such as a custom cellular ceiling. Composed of 4,500 individually formed cones, the ceiling is made from window-shade material that helps to absorb reflected sound and direct light from the perimeter further into the core of the space, an added functionality that impressed juror Frank Barkow. "I really like the ceiling idea," he said, "especially the components that made it and how it was conditioned by local and general lighting conditions." The jury admired the house's overall combination of form and function, but it was the monitoring system that especially caught their attention. K.G.



↑ Access
The systems in the North House can be accessed in a variety of ways: from a Web-based application, through on-site touchscreens, or from the user's iPod or iPhone. This allows residents to track information and to control the house's systems remotely, ensuring that energy savings can be maximized even when the house isn't occupied.



↑ Integration

Individual systems are integrated into the Central Home Automation master system, which monitors energy usage and production for the house's occupants. The data is stored and presented on a series of touchscreen panels inside the home that allow the user to change settings, track systems, and chart energy usage over time.

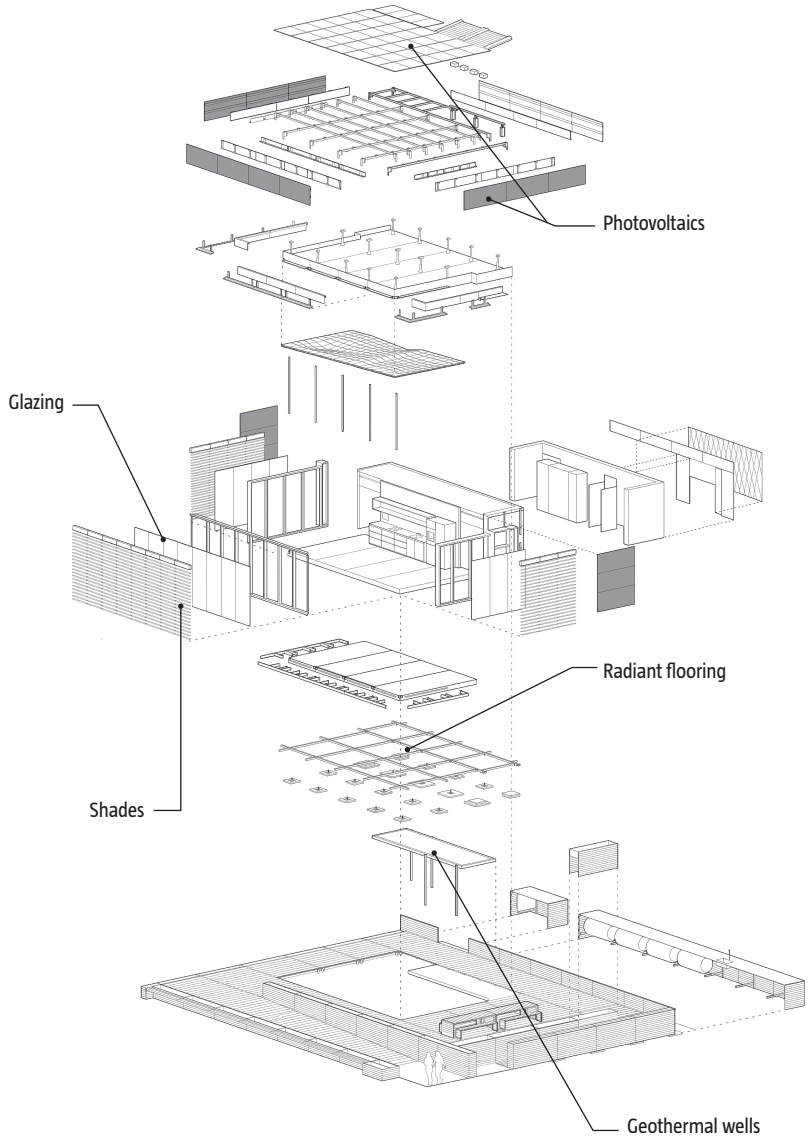


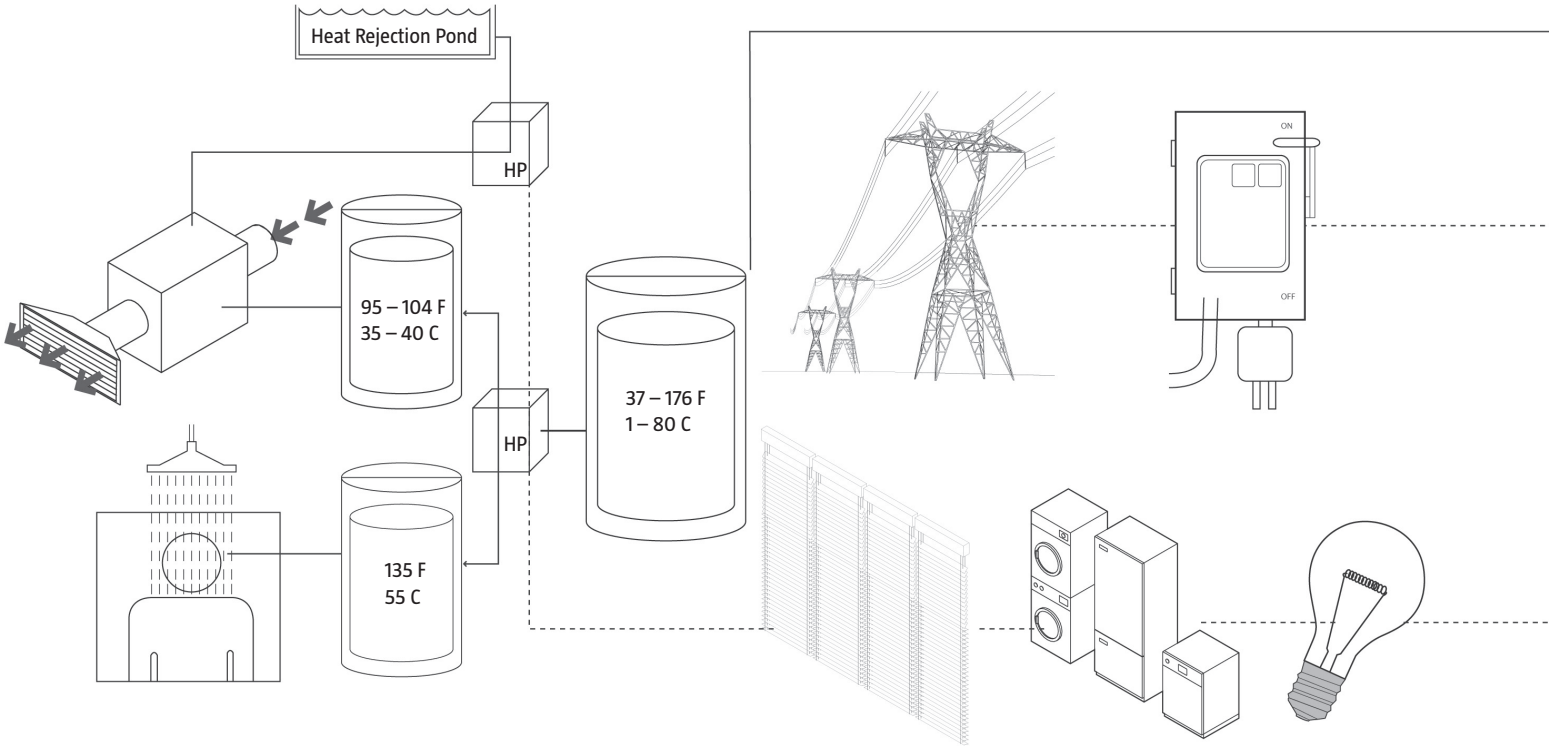


↑ Façade

The house is clad in a Distributed Responsive System of Skins prototype that includes deployable exterior shades over quadruple-glazed IGUs and a series of building-integrated photovoltaic panels that generate electricity. The skin allows maximum light transmittance while retaining heat for passive heating in the winter months, and the shades can be deployed to reduce heat gain during the summer.

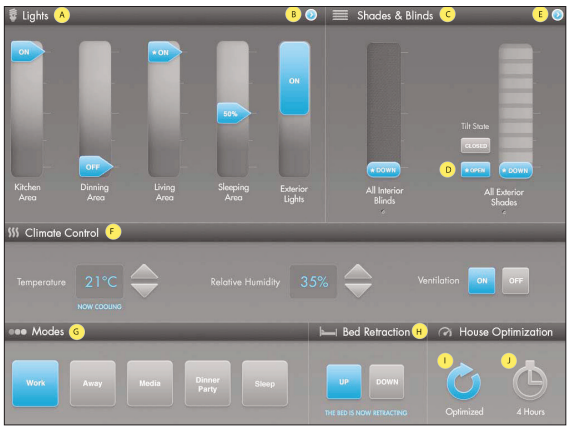
Exploded Axonometric

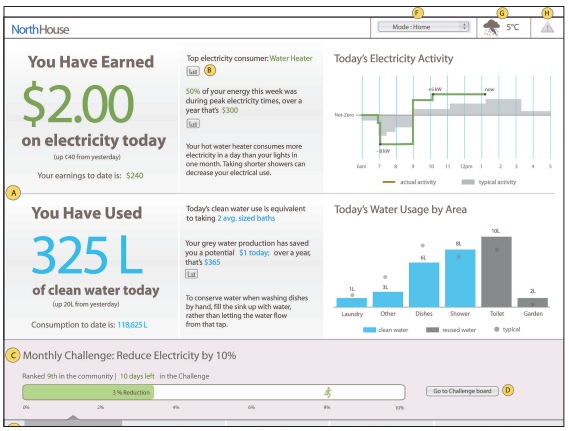


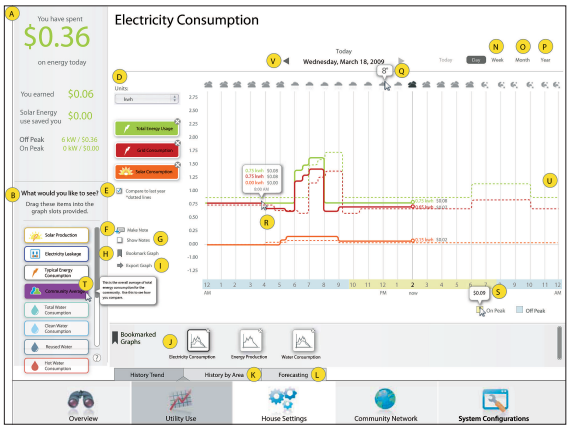


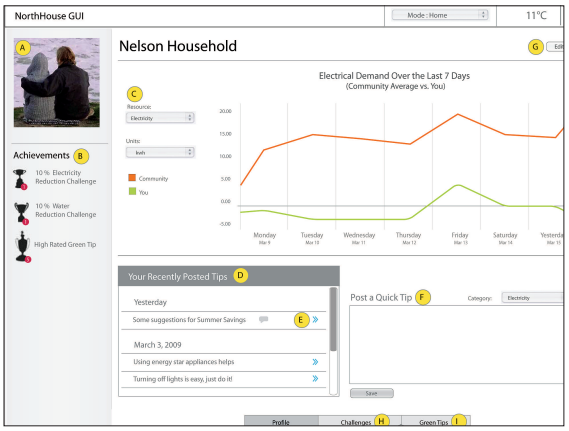
Feedback →

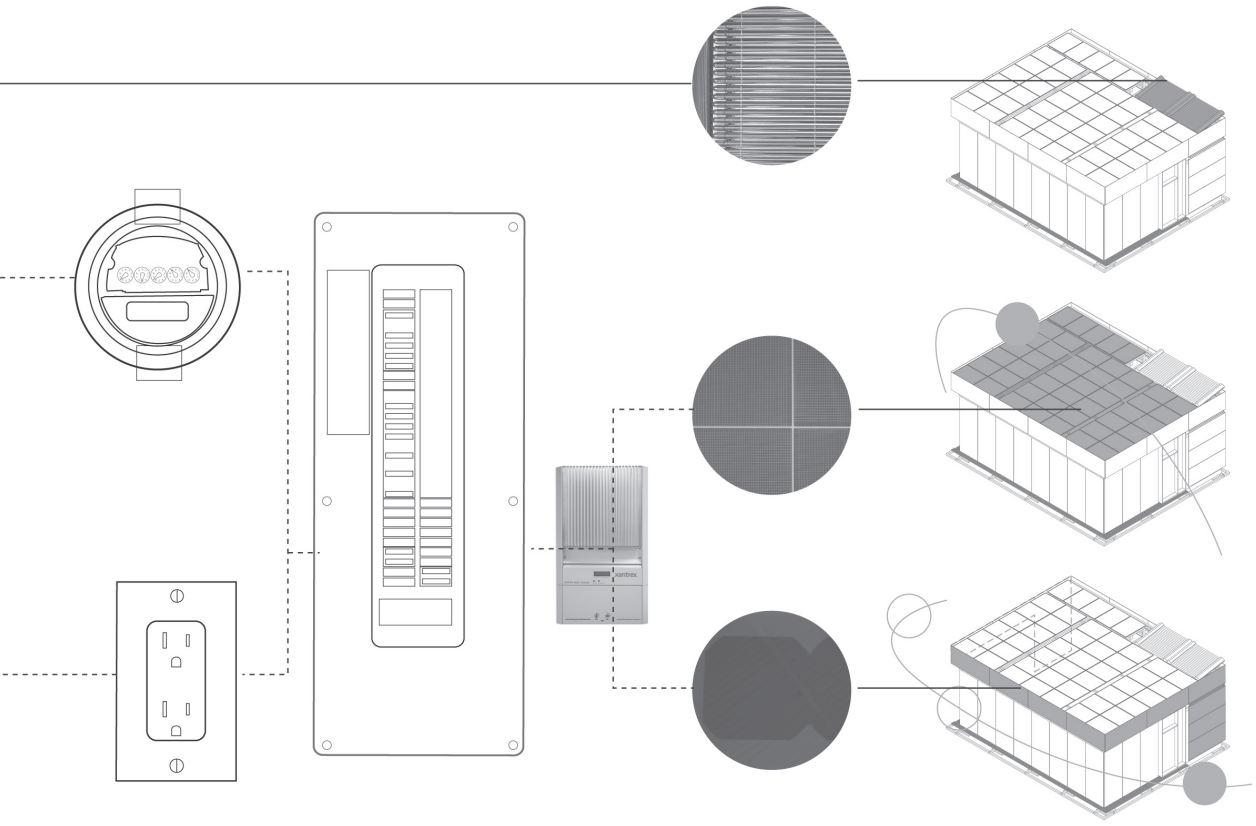
The software behind the building management system is based on open-source calendar and social networking programs, which promote accessibility. Users can translate energy savings into dollar amounts and track and chart resource usage without needing an extensive training regimen.











← Resources
Solar power (from the façade photovoltaic (PV) array and an additional applied array of PV cells on the roof) and hot water production are tracked through to the end use, whether that is warm water for showers or a surplus of energy returned to the power grid.



↑ Functionality
To optimize the house's interior, the team designed a custom ceiling treatment with 4,500 individually formed cells made from window-shade material. The cells both reduce sound reflectivity and pick up natural light at the perimeter, helping to project and diffuse it further into the floor plate. Phase-changing materials in the floor store heat from the sun's rays and radiate it out during cold winter nights, an energy savings that can be tracked on the integrated touchscreens. Making the most of the small floor plan is a deployable bed, which can be retracted into the ceiling when not in use.

AWARD

Green-Zip Tape

Manufacturer Green-Zip Tape Partition, Magnolia, Texas—W. Frank Little Jr. (inventor and patent holder)

IT'S HARD TO get simpler in conception and execution than Green-Zip Tape. The product is a substitute for the joint-compound tape that has been used between gypsum board panels since the introduction of prefabricated plasterboard in the early 1930s. The product impressed all three jurors.

Cristobal Correa noted that the product is one step in a new process that allows for the reuse of drywall—creating demountable partitions. In fact, builders can reuse the metal studs, tracks, and screws as well. A releasable adhesive is applied to the middle studs, while screws are used only to attach the edges of the boards. Green-Zip Tape is applied—much like ordinary tape—with joint compound float applied over it. But Green-Zip Tape is extended 3 inches beyond the bottom of the panel and can be hidden under the carpet or behind a base. When it's time to demount the wall, you simply expose the end of the tape and peel it off—exposing the board's edges and screws for simple disassembly. The only material that can't be reused is the joint compound.

Green-Zip Tape has already been deployed in Chevron Corp.'s Houston headquarters, where a three-month payback on investment is expected. The innovation could have ramifications for green building in general: Executive Order #13514 requires federal buildings to deter 50 percent of construction waste from landfills using recycling or reuse by 2015. Green-Zip Tape could be a significant boon to building owners trying to meet this requirement.

But its use isn't limited to construction and recycling. Moving HVAC services around a building can be accomplished without messy and time-consuming cutting and patching, if the builder has used the attachment system in the building.

"It's kind of a banal thing, but smart," Frank Barkow said. "If you think about the square meters of this stuff that has to be moved every day, it's huge." Jenny Wu noted, in "a simple way, it's trying to do something."

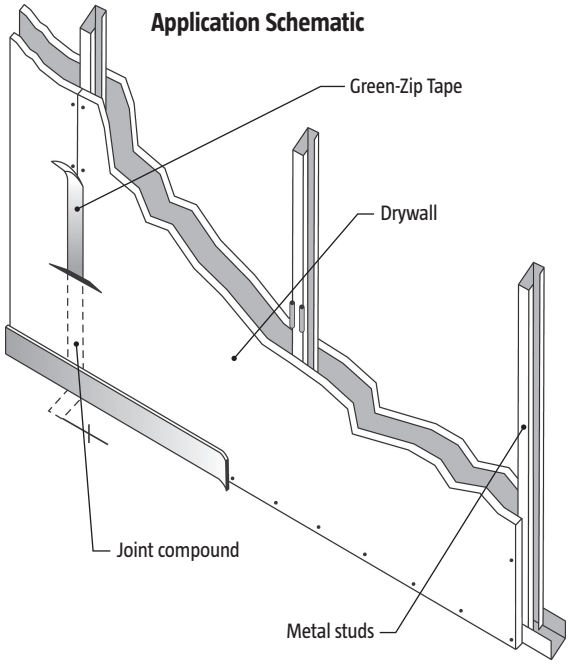
EDWARD KEEGAN



MIKE MORGAN



↑ The Tape
Founder W. Frank Little Jr. is an architect who studied under E. Fay Jones and practiced at Gensler. But it was a master's degree in architectural tax law that was the key to his invention of demountable drywall tape. He discovered that if drywall is removable and reusable, there is a tax benefit that is worth up to 25 percent of the total cost of the material.





↑ Installation
Joint compound—the material placed over the tape to seal the joint—hardens as it cures, causing many tapes to rip if pulled off after installation. Green-Zip Tape is installed using the same process, but its woven backing allows it to remain intact when pulled off, allowing drywall to be demounted.

AWARD

Shadow Pavilion

Architect PLY Architecture, Ann Arbor, Mich.—Karl Daubmann (principal); Ngoc Thy Phan, Alex Timmer (assistants); Chris Johnson, Peggy Chong, Jessica Mattson, Katie Santer, Dwight Song, Alex Watanabe (University of Michigan student construction assistants)

Client David Michener (curator, University of Michigan Matthaei Botanical Gardens and adjunct assistant professor, School of Natural Resources and Environment); Bob Grese (director, professor, University of Michigan Matthaei Botanical Gardens and School of Natural Resources and Environment)

(project credits continued on page 82)

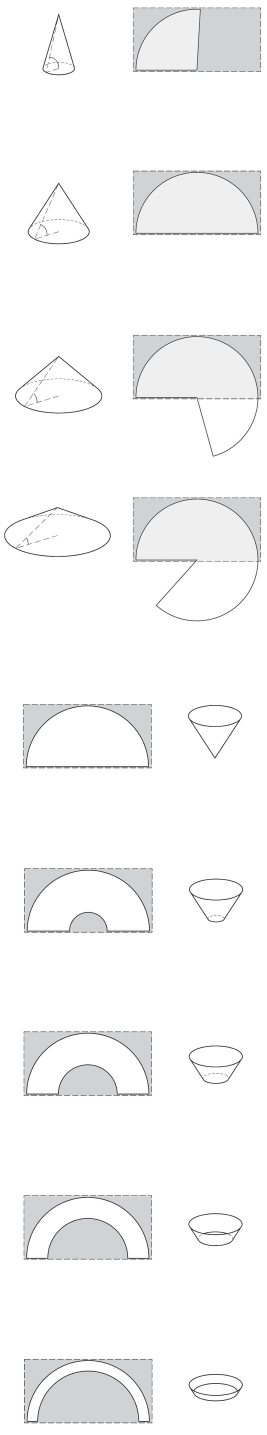
THE SHADOW PAVILION is both a structure and a space made entirely of holes. The surface of the pavilion, which is installed at the Matthaei Botanical Gardens at the University of Michigan, is made of 100-plus, laser-cut cones that vary in size. Beyond testing the limits of sheet aluminum, the cones funnel light, moisture, and sound to the interior space.

Yet the outcome seems almost beside the point: It was the process that most intrigued the jury. The design team, led by Karl Daubmann, a principal of PLY Architecture in Ann Arbor, Mich., and an associate professor at the University of Michigan, conducted an exhaustive study of geometric patterns and presented them compellingly in what juror Cristobal Correa called "a tight little book." In addition to admiring the project's formal investigations, the jury lauded the submission for embracing materials testing.

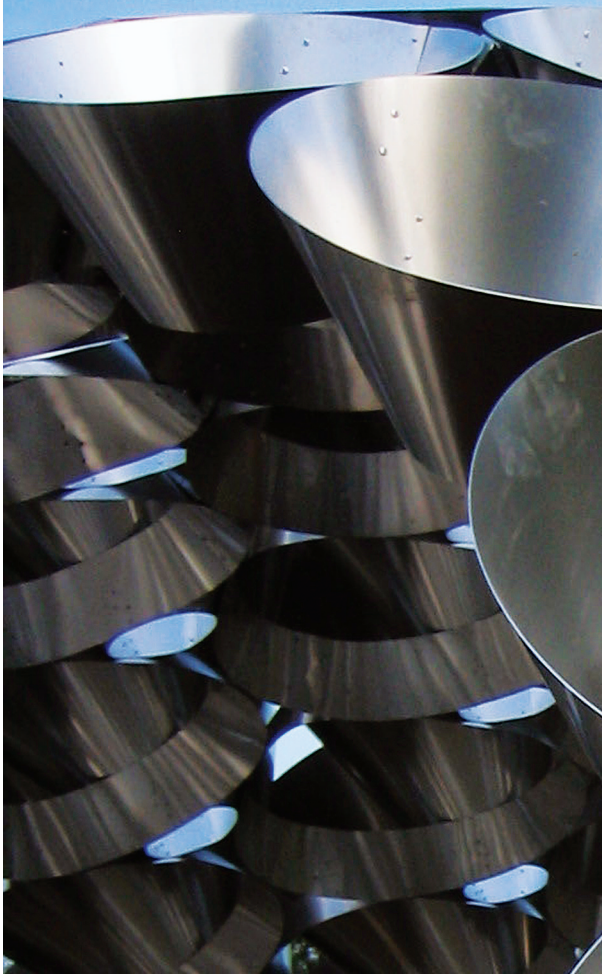
Drawing analogies from botany—specifically, the study of phyllotaxis, the arrangement of leaves—the underlying research set out to give material and process the upper hand, letting form emerge as the secondary result of experimentation. The team decided to work with aluminum because its low cost allowed for repeated study of different shapes and sizes. An abundance of local shops equipped with cutting technologies also aided that choice.

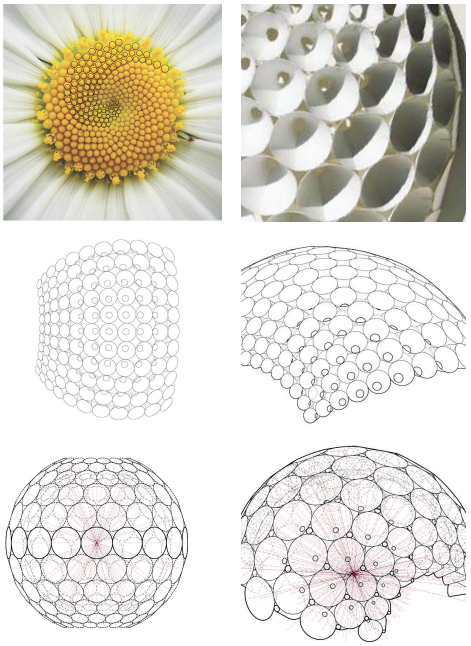
Early studies of circles and cones progressed quickly to complex three-dimensional plots. Shadow studies examined the effects of changes in the cone angle, depth, and arrangement. Additional exercises involved Rhino-scripting the cones onto a predetermined surface to analyze strength-giving connection points. To minimize waste, the team looked at which cone shapes (flat vs. steep) made the most efficient use of the material.

Initially, the jury regarded the project as mere sculpture—form, but no function. "But I like that it's additive," juror Frank Barkow said. "And the cone has a certain multitasking quality where it conditions the light. At the same time, it doesn't require an extraneous structural system to hold it up." VERNON MAYS

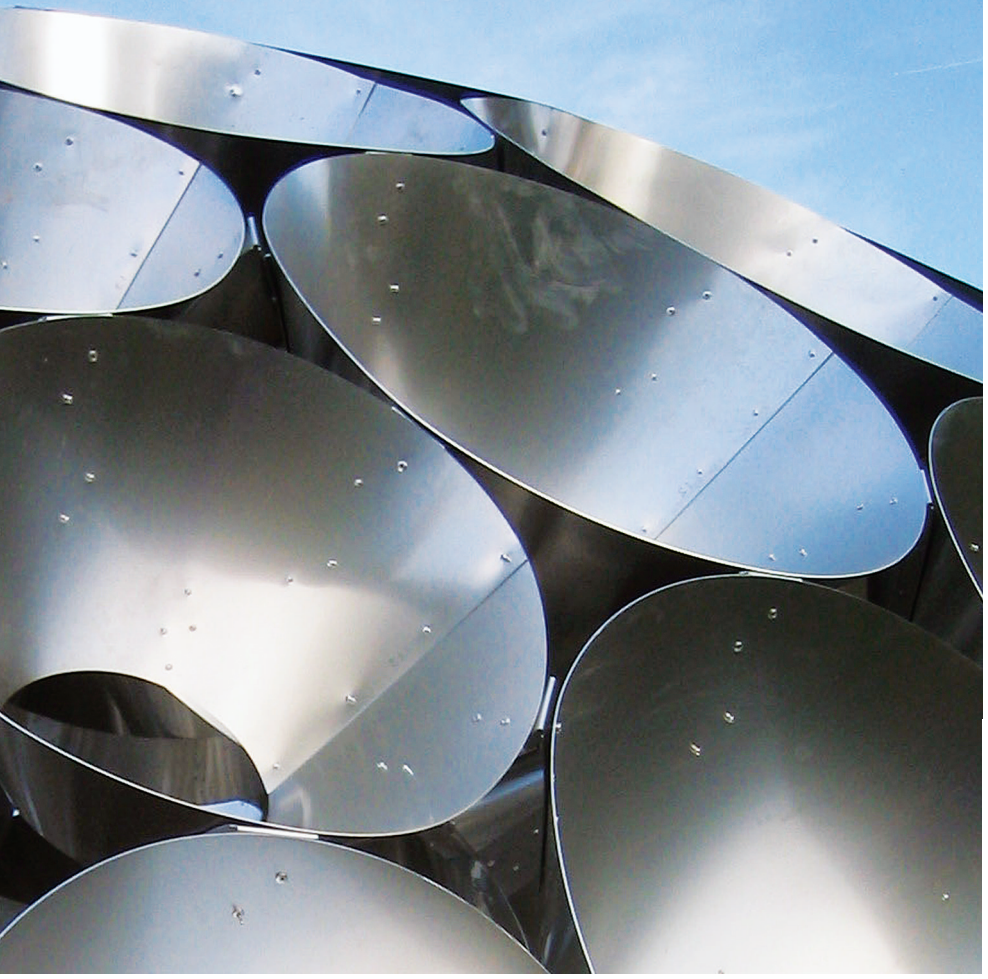


↑ Angle and Depth
Striving for material efficiency, the team conducted geometric studies to identify the ideal angle and depth of the cones. The first set of studies (top) determined that the most efficient use of aluminum sheets resulted in a 60-degree cone. The second series of studies (bottom) investigated the material usage of various depths of cones, which then had to be weighed against the effect on light transmittance into the pavilion.





↑ Configurations
The team investigated different grid configurations, including a hexagonal grid (top) based on phyllotaxis, and a square grid (middle). The hexagonal grid won out because it offered more flexibility (with two additional connection points per cone), but through geometric modeling, the team determined that regardless of the grid pattern, the axes were similar for various shapes being explored (bottom).

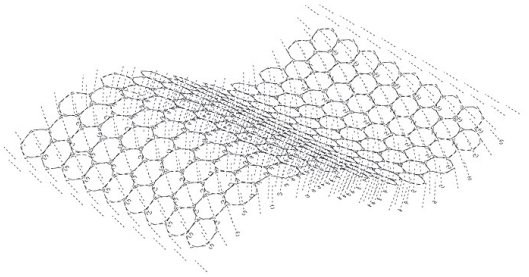


← Aluminum Cones

The maximum cone size was based on the largest available sheet of aluminum, and each piece was laser cut before being formed into the three-dimensional form. These cones were then grouped in subassemblies that were transported to the site where the pavilion was assembled. The cones on the bottom row were built to be filled with gravel and sealed, weighing down the structure and preventing uplift from winds on the site.

↓ Rhino-Scripting

Scripting was used to help generate better understanding of the complex geometries and forces involved in the structure. Placing cones over a predetermined curved field helped the team to identify the connection points that give the double-layered surface of cones its strength, and to determine guide geometry that helped in modeling the ideal height of the cones. This ensured that the structure would be self-supporting and withstand any wind loads thrown at it.



```
For i = 0 To Ubound(arrHexagons)
        arrCrvPts = Rhino.CurvePoints(arrHexagons(i))
        arrHexagonPts = Rhino.CullDuplicatePoints(arrCrvPts)
        strLine01 = Rhino.AddLine (arrHexagonPts(0), arrHexagonPts(3))
        arrCenterPt = Rhino.CurveMidPoint(strLine01) 'center point of cone
        strLine02 = Rhino.AddLine (arrHexagonPts(0), arrHexagonPts(1))
        arrRadiusPt = Rhino.CurveMidPoint(strLine02)
        Call Rhino.DeleteObjects(array(strLine01,strLine02))

        'creates new 'cplane'
        arrOrigin   = arrCenterPt
        arrPlane(0)  = arrCenterPt
        arrPlane(1)  = Rhino.VectorCreate(arrCenterPt, arrHexagonPts(0))
        arrPlane(2)  = Rhino.VectorCreate(arrCenterPt, arrHexagonPts(1))
        arrNewPlane = Rhino.MovePlane(arrPlane, arrOrigin)

        'finds normal for cone height
        arrNormal = Rhino.CurveNormal(arrHexagons(i)) 'normal of hexagon
        arrHeightNormal = Rhino.VectorScale(arrNormal, dblHeight)
        ReDim Preserve arrHeight(Ubound(arrHeight)+1)
        arrHeight(Ubound(arrHeight)) = Rhino.PointAdd(arrCenterPt, arrHeightNormal)

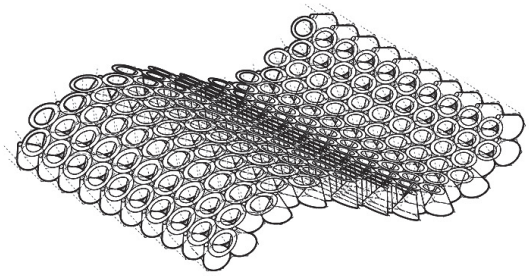
        'radius of large circle
        dblRadius = Rhino.Distance (arrCenterPt, arrRadiusPt)

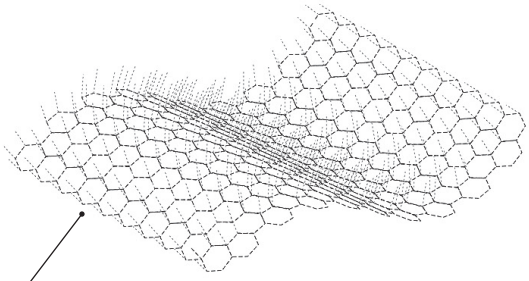
        'radius of smaller circle
        dblHexDiam = Rhino.Distance (arrHexagonPts(0), arrHexagonPts(3))

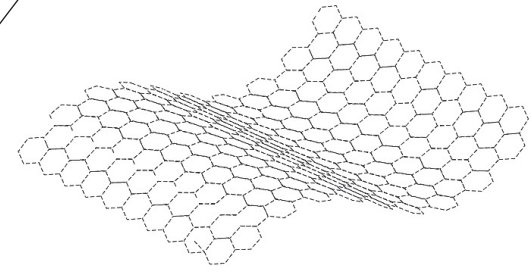


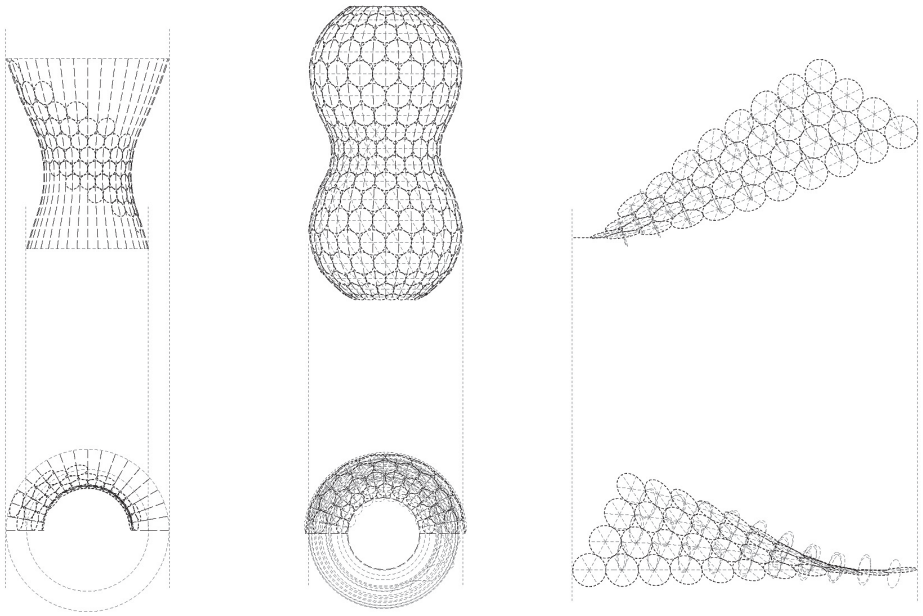
        ReDim arrCompareDist(-1)
        'compare endpt of center line normal to all curves, store closest points from curves - for small circles
        arrCenterComparePt = Rhino.CurveStartPoint(arrCenterNormals(i))
        For j = 0 To Ubound(arrLgCirEdge)
                dblPtParam = Rhino.CurveClosestPoint(arrLgCirEdge(j), arrCenterComparePt)
                ReDim Preserve arrCirClosePt(Ubound(arrCirClosePt)+1)
                arrCirClosePt(Ubound(arrCirClosePt)) = Rhino.EvaluateCurve(arrLgCirEdge(j), dblPtParam)
                ReDim Preserve arrCompareDist(Ubound(arrCompareDist)+1)
                arrCompareDist(Ubound(arrCompareDist)) = Rhino.Distance(arrCenterComparePt, arrCirClosePt(Ubound(arrCirClosePt)))
        Next

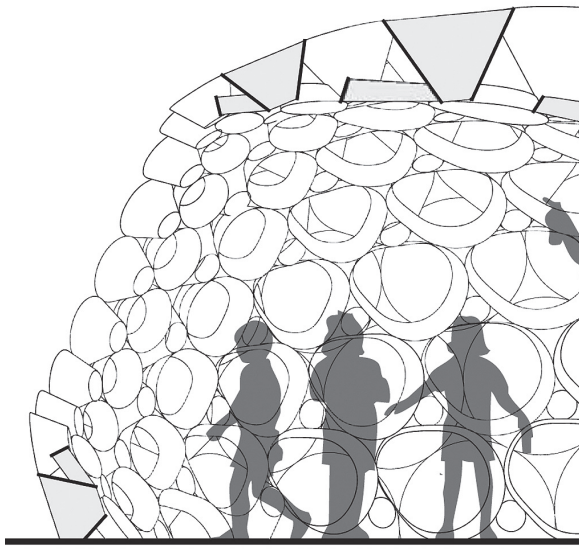
        'finds three points for small circle, points closest to center line normal
        arrSortCompareDist = Rhino.SortNumbers(arrCompareDist)
        For j = 0 To Ubound(arrCirClosePt)
                If arrCompareDist(j) = arrSortCompareDist(0) Then arrSmCir(0) = arrCirClosePt(j)
                If arrCompareDist(j) = arrSortCompareDist(1) Then arrSmCir(1) = arrCirClosePt(j)
                If arrCompareDist(j) = arrSortCompareDist(2) Then arrSmCir(2) = arrCirClosePt(j)
```

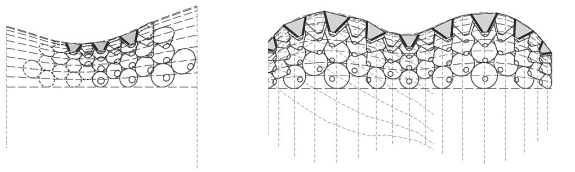


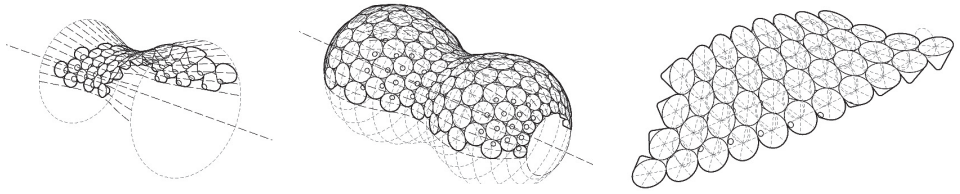


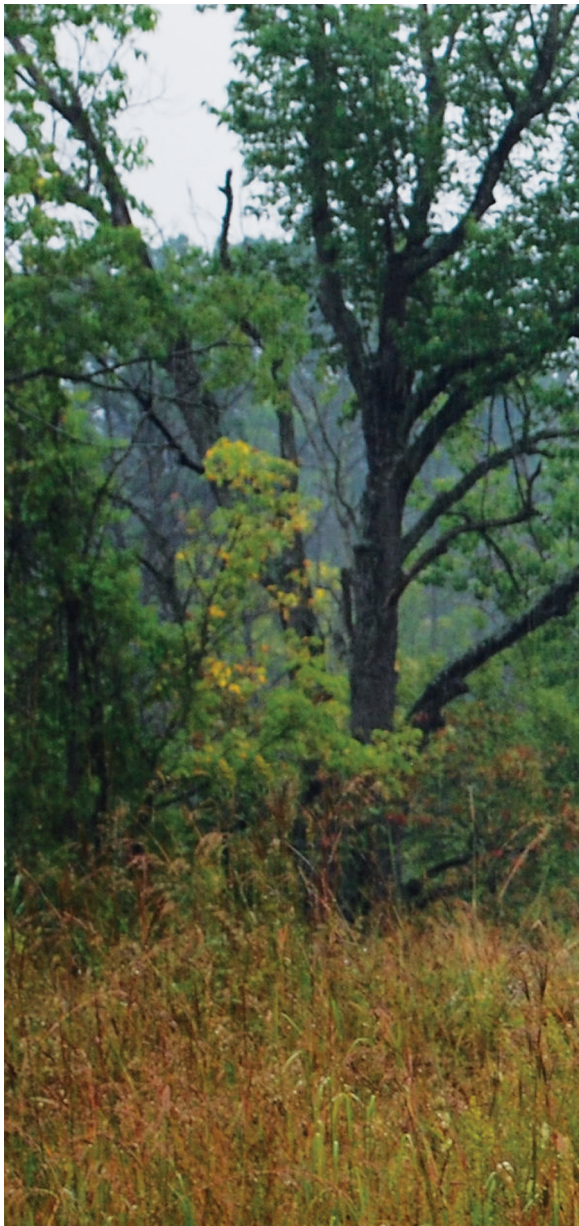




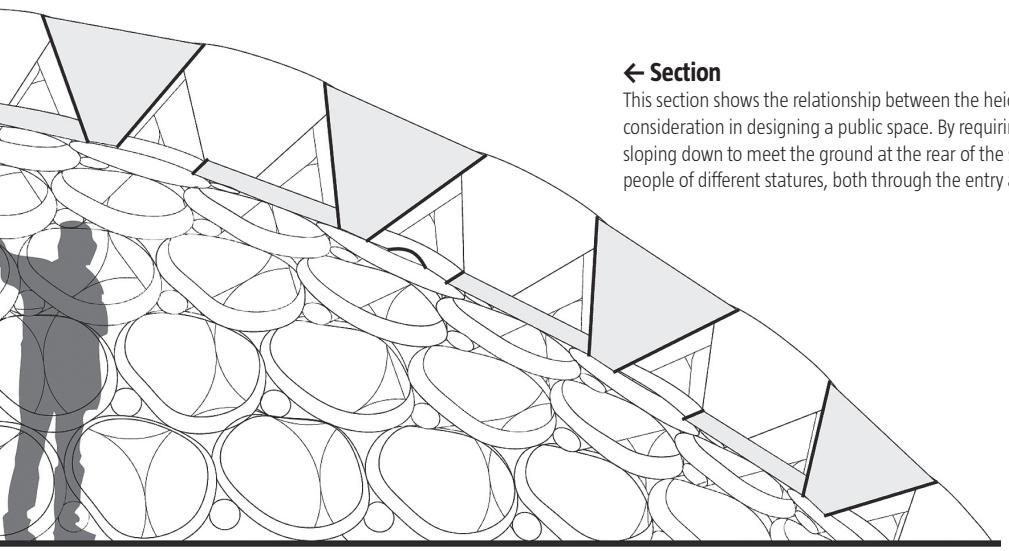








↑ Rotational Geometry
In order to achieve variation with something as static as a grid, the team looked to rotating the grid around different points and axes to change the form. By experimenting with vertical or slightly canted horizontal axes, the team was able to make the grid shift, bend, and twist in ways that informed the final geometry of the pavilion.



← Section

This section shows the relationship between the height of the pavilion and the height of the average visitor, an important consideration in designing a public space. By requiring visitors to step up and over a threshold to enter the space—and by sloping down to meet the ground at the rear of the structure—the pavilion creates a series of carefully framed views for people of different statures, both through the entry and through the apertures in the metal cones.

↓ Completed Structure

The reflectivity of the aluminum cones picks up the colors of the pavilion's environment. But the geometry of the cones themselves creates an interesting visual trick. The lower curve of each piece reflects the sky, and the upper curve reflects the ground plane, creating an inverse relationship with the surrounding landscape.



CITATION

Community Rowing Boathouse

Project Community Rowing Boathouse, Boston

Architect Anmahian Winton Architects, Cambridge, Mass.: Alex Anmahian, Nick Winton, Todd Thiel, Sydney Schremser, Joel Lamere, Makoto Abe, Julia Davis, Aaron Stavert, John Paul Dunn, Garth Goldstein, Andrew Plumb, Mazen Sakr, Munira Fleyfel, Aaron Bruckerhoff

Client Community Rowing Inc.

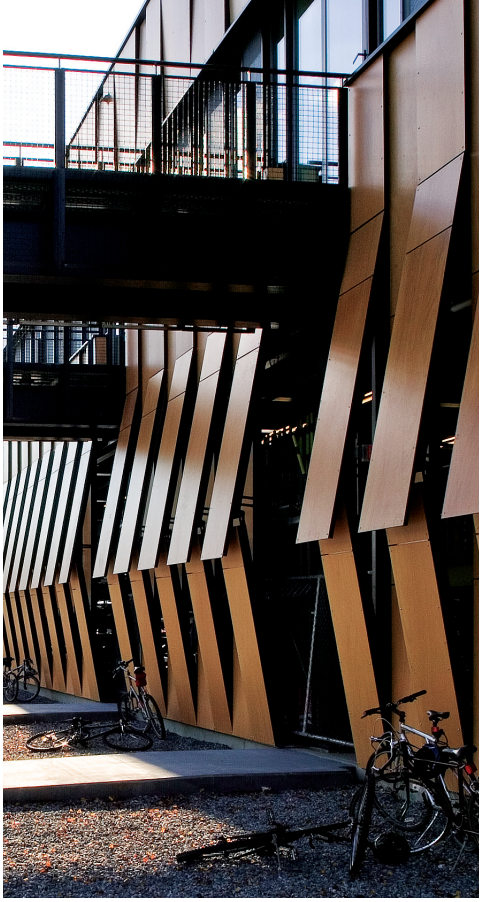
(project credits continued on page 82)

WHEN THE ONLY public-access rowing club on Boston's Charles River required a new facility, Anmahian Winton Architects saw a chance to modernize the vocabulary of local rowing structures while taking inspiration from antecedents such as covered bridges and tobacco barns.

The team developed three types of functional cladding for the project. At the main boathouse, an assembly of composite panels with operable vents allows for natural ventilation. Patterned louvers on the south face mask mechanical vents, offer privacy for locker rooms, and induce natural cooling. At the adjacent sculling pavilion, glass shingles—held in custom extruded and fabricated aluminum clips—protect, ventilate, and display the smaller boats.

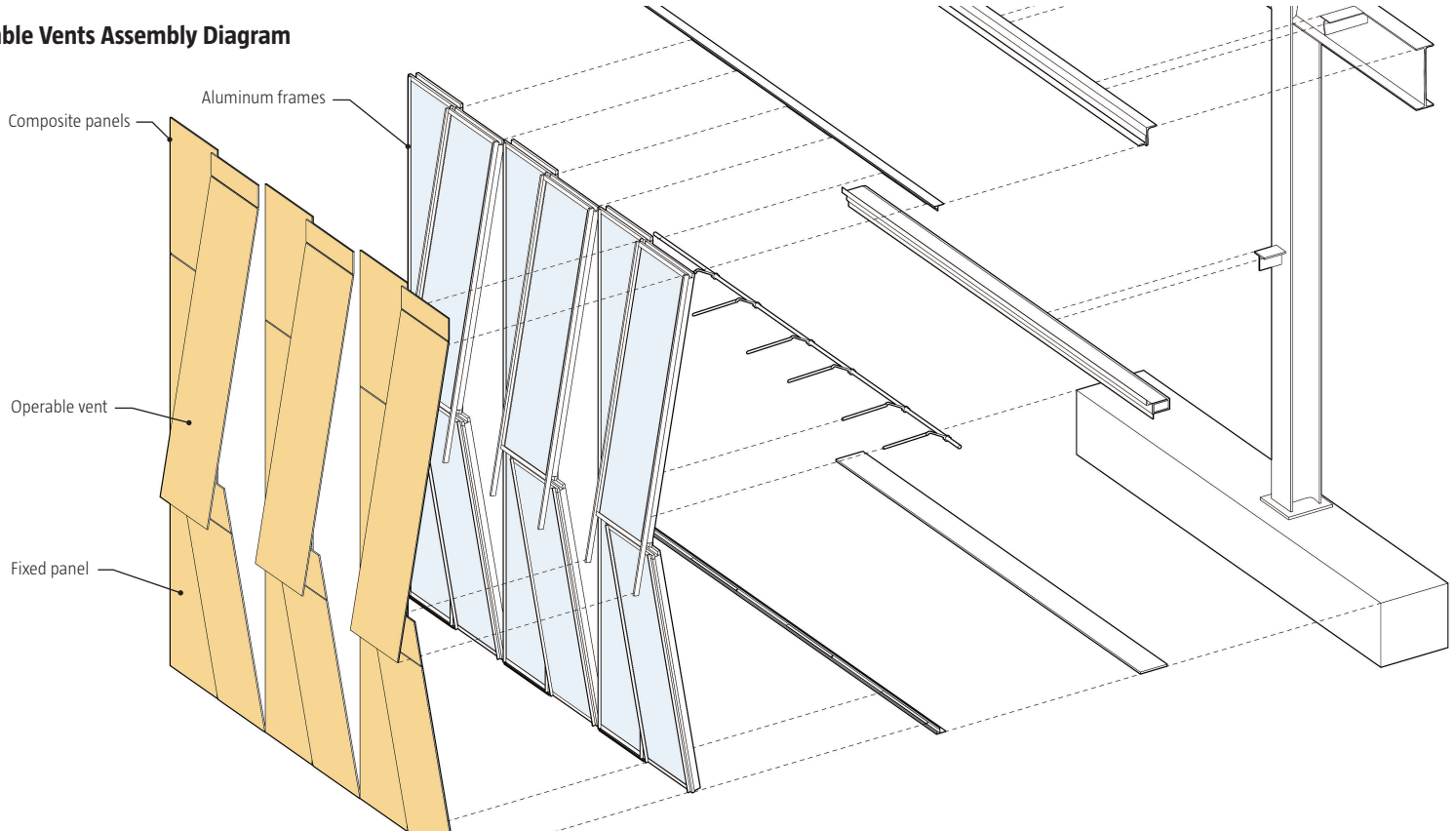
"It's very rustic; it's a hard environment, and they somehow softened it," commented juror Cristobal Correa. A.K.H.





↑ Building Envelope
The architects strove to design a boathouse that would conserve energy and natural resources and have low operating costs. Their solution: an active building-envelope system, created using digital design tools and in close collaboration with fabricators and other consultants. Made of aluminum frames and composite panels, the prefabricated system has vents that open (right) with a tug on an off-the-shelf chain pull. These vents not only create an active façade; they eliminate the need for mechanical heating and cooling of the 300-foot-long boat storage bays.

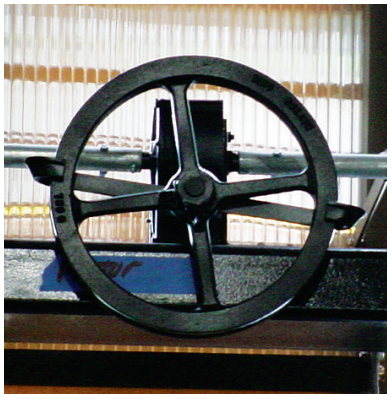
Operable Vents Assembly Diagram





↑ Activity Center
The 30,000-square-foot facility is intended to reinvigorate public use of the riverfront site. To that end, the design team created a fluid building surface that shifts as people move around it. The operable vents and the patterned louvers (above left) connect indoors and out, and a public court (foreground) between the boathouse and the smaller sculling pavilion establishes a visual connection to the Charles.



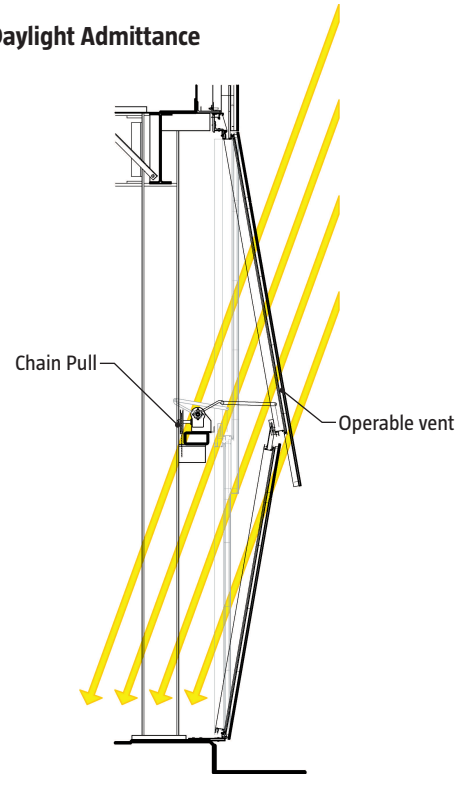






↑ Fabrication and Installation
The design team made use of state-of-the-art digital fabrication technology and worked closely with manufacturers, fabricators, and installers from early in the process, which helped maintain quality of construction and kept costs down. The building envelope system—made of aluminum frames and composite panels, and operated with off-the-shelf chain pulls—was prefabricated off-site, then delivered as pre-assembled components. This helped the team meet a tight construction schedule.

Daylight Admittance



CITATION

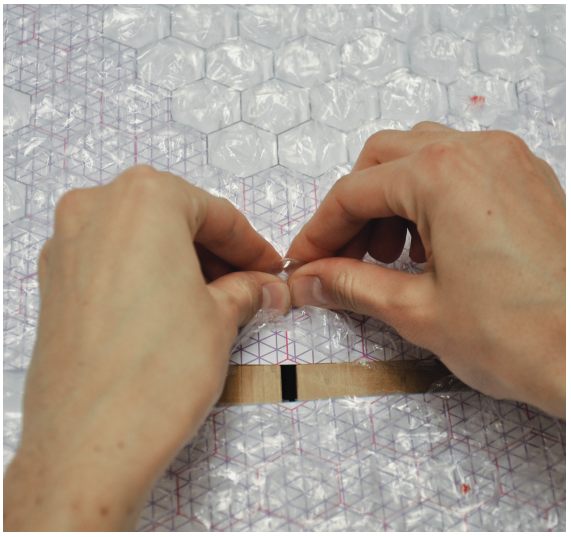
Bitmaps

Architect PROJECTiONE, Muncie, Ind.—Elizabeth Boone, Kyle Perry, Adam Buente, Eric Brockmeyer (design and production team)

WALLPAPER IS NOT everyone's cup of tea. So in response to a client's interest in developing 3D wall paneling, PROJECTiONE of Muncie, Ind., set out to invent a system of ornamental tiles. The result is Bitmaps, a modular solution achieved through the use of vacuum-form technology and a reusable mold.

Jurors enthused over the surface's "decorative power," derived from a pattern of carefully controlled dots (either raised, flat, or imprinted in the surface). The design team prototyped the system using bubble wrap, then refined the idea with a High Density Polyethylene (HDPE) mold. Positive, negative, and flat plugs were milled and inserted manually into the mold, which forms the dimpled panels in .06-inch-thick white polystyrene. Surfacing and milling were performed on a three-axis CNC router, and oriented strand board backing provides needed rigidity. "The joinery is quite beautiful, very sophisticated and adept," juror Frank Barkow said.

In this application, Bitmaps was used on a bathroom ceiling and walls. Integral lighting and ventilation controls function via capacitance sensing (placing one's hand in front of the proper dimple is akin to flipping a switch). Jurors complimented the accessory console that houses a magazine rack, toilet paper dispenser, and iPhone holder. V.M.

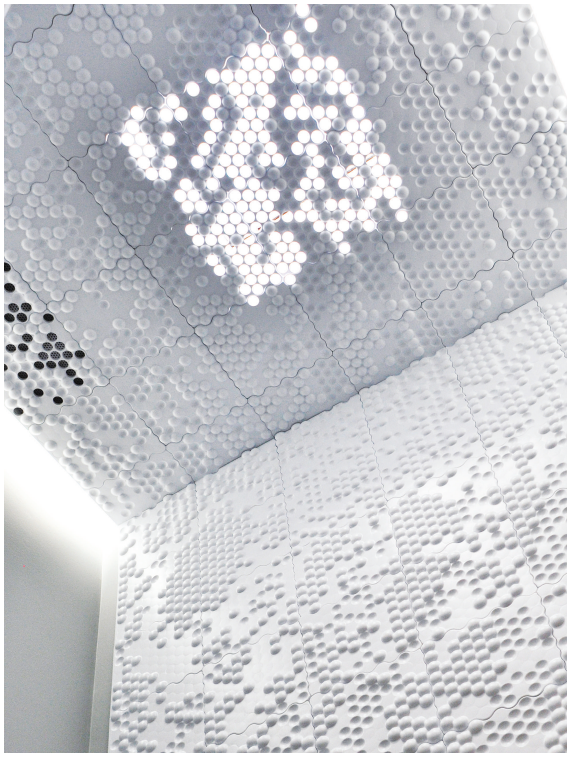


← Prototype
To help visualize the three-dimensional quality of the surface, the team went through a prototyping process that involved popping bubble wrap over a pattern of planned raised, flat, and depressed dots.

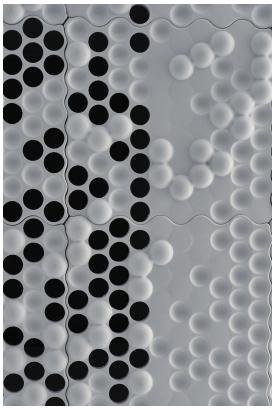


← Support
Oriented strand board was milled on a three-axis CNC router to correspond to the positive and negative bumps on each specific tile. These boards were fitted behind the tiles and attached with adhesive to give support to the thin polystyrene material and to ensure that the tiles were spaced uniformly.

Application →
The patterning of the panels was customized to the needs of this particular bathroom application. The ceiling fan vent and skylight, for example, are accommodated by perforated panels (left)—an adaptive characteristic that piqued the jury's interest. Panels were formed to accommodate an accessory console (middle) that holds everything from toilet paper to a cell phone as well as the designers' signature. All panels are joined via a serpentine seam (right top and bottom) that weaves between the dots on the adjacent tiles so as not to disrupt the overall effect of the vacuum-formed surface.









CITATION

New York Stock Exchange Security and Streetscape

Architect Rogers Marvel Architects, New York

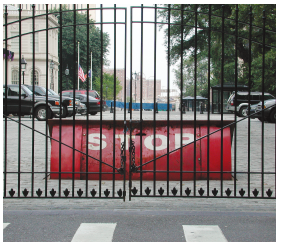
Client New York City Economic Development Corp.; Lower Manhattan Development Corp.; New York City Department of City Planning, New York City Department of Transportation

(project credits continued on page 82)

IN THE POST-9/11 ERA, security has become omnipresent in urban centers such as New York's financial district, often resulting in an obstructed streetscape. Finding existing street security options lacking in either performance or design, New York–based Rogers Marvel Architects developed the Turntable Vehicle Barrier (TVB), which features perforated-bronze-clad bollards set in a paved piece that can swivel to block the street or allow vehicle access as necessary.

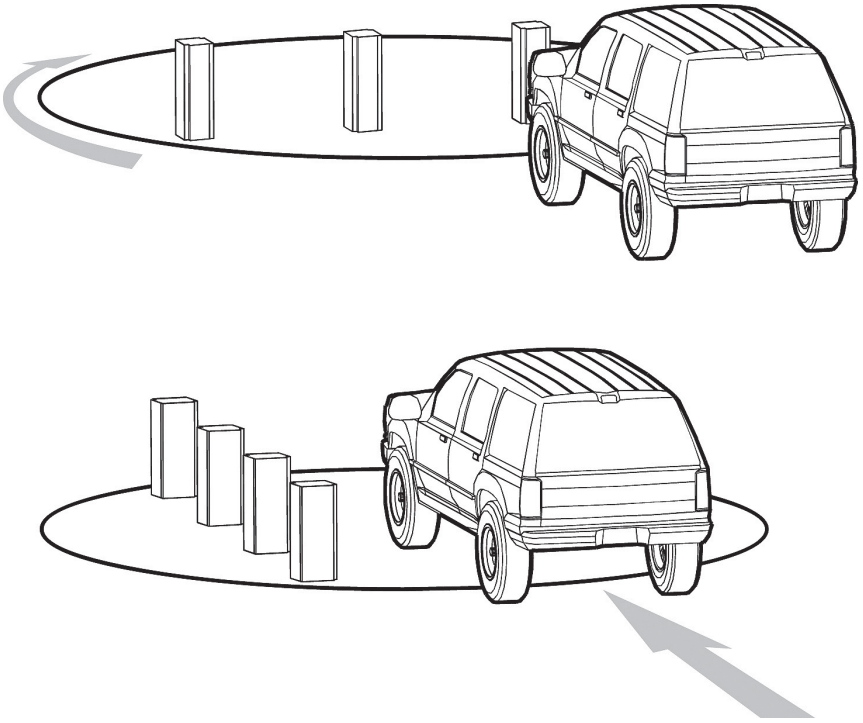
The turntable itself is a galvanized steel frame set in a shallow foundation, allowing the system to be installed over subway tunnels, utility lines, and other pieces of urban infrastructure. The surface can be infilled with cobbles, brick, or other paving materials to match the surrounding area. "It's a new take on an old problem, or a very typical problem that we're all dealing with," said juror Cristobal Correa, "and it shows an inventive solution." Juror Jenny Wu called it "a very clever idea." More than that, it's secure: The TVB can stop a 15,000-pound truck traveling 50 miles per hour. K.G.



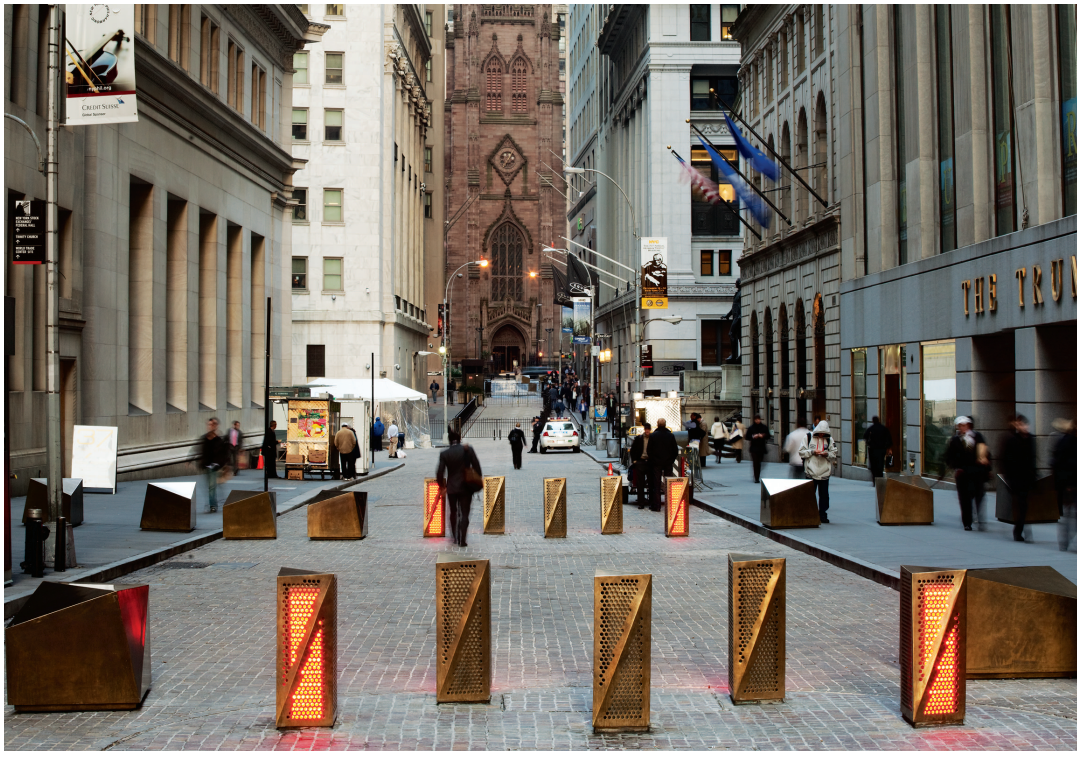




↑ Available Security Options
The Turntable Vehicle Barrier (TVB) is certainly not the only such security barrier available; the most common options include (from left to right) operable bollards, steel plate barriers, and clamshells. But unlike these hydraulically-powered barriers, the TVB uses a caster bearing system to turn.



↑ Operational Turntable
Most streets that require traffic to be blocked for security reasons still provide access for certain approved vehicles. The bollards on the turntable are fixed, but as the table swivels, the orientation of the bollards changes enough to allow traffic to pass. When vehicle traffic is prohibited, however, the bollards do not block pedestrian access, a key feature for busy urban areas with high foot traffic.



← Renovated Financial District Streetscape
The turntables have been in place in New York's financial district since last year, replacing clamshell barriers that limited pedestrian access and disrupted the view. Integrated light panels signal to drivers whether or not the street is passable. The perforated-bronze cladding mimics the finish of the existing sidewalk barriers.

CITATION

HelioTrace Façade System

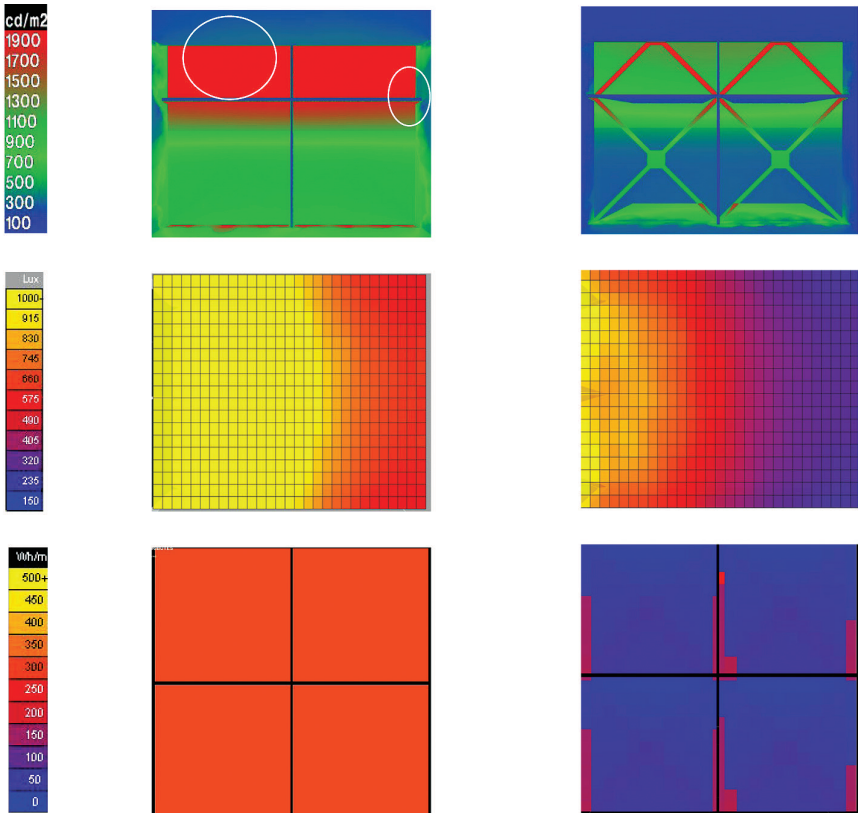
Architect Skidmore, Owings & Merrill, New York—Mark Bearak, Xiaojun Bu, Craig Burton, Kevin Cahill, Peter Glasson, Rebekah Kingsley, Julie Hiromoto, Nicholas Holt, Colin Koop, James Kraus, Kenneth A. Lewis, Donald Marmen, Cynthia Mirbach, Christopher Olsen, Samuel O'Meara, Alexandra Pollock, Teresa Rainey, Marzia Sedino

(project credits continued on page 82)

THE HELIOTRACE FAÇADE SYSTEM integrates three different systems—kinetic shades, the building enclosure, and internal mechanicals—into an adaptive façade that seeks to minimize energy use while maximizing user comfort. Its developers claim an effective shading level of 78 percent and an annual peak solar gain reduction of 81 percent.

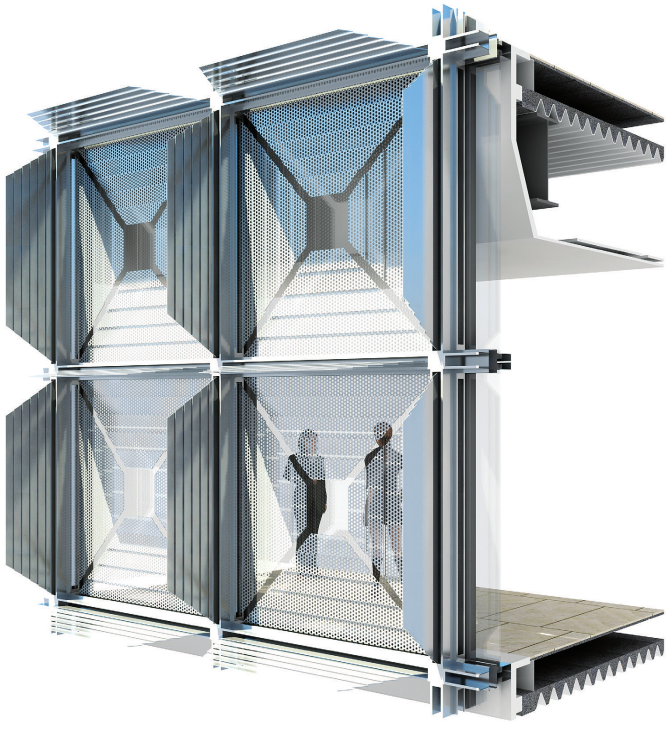
In HelioTrace, a high-performance glass curtain wall is shaded by two exterior devices: opaque panels that project from the mullions, perpendicular to the façade; and 50-percent perforated panels deployed parallel to the building envelope. Both can be programmed to respond to solar movement and interior occupancy. Energy savings are enhanced by integrated interior systems: chilled ceilings and beams, and an underfloor dedicated outside air system.

Frank Barkow admired "the idea of a kinetic sunscreen," and called the system a "skin job"—not in a pejorative way, either. E.K.

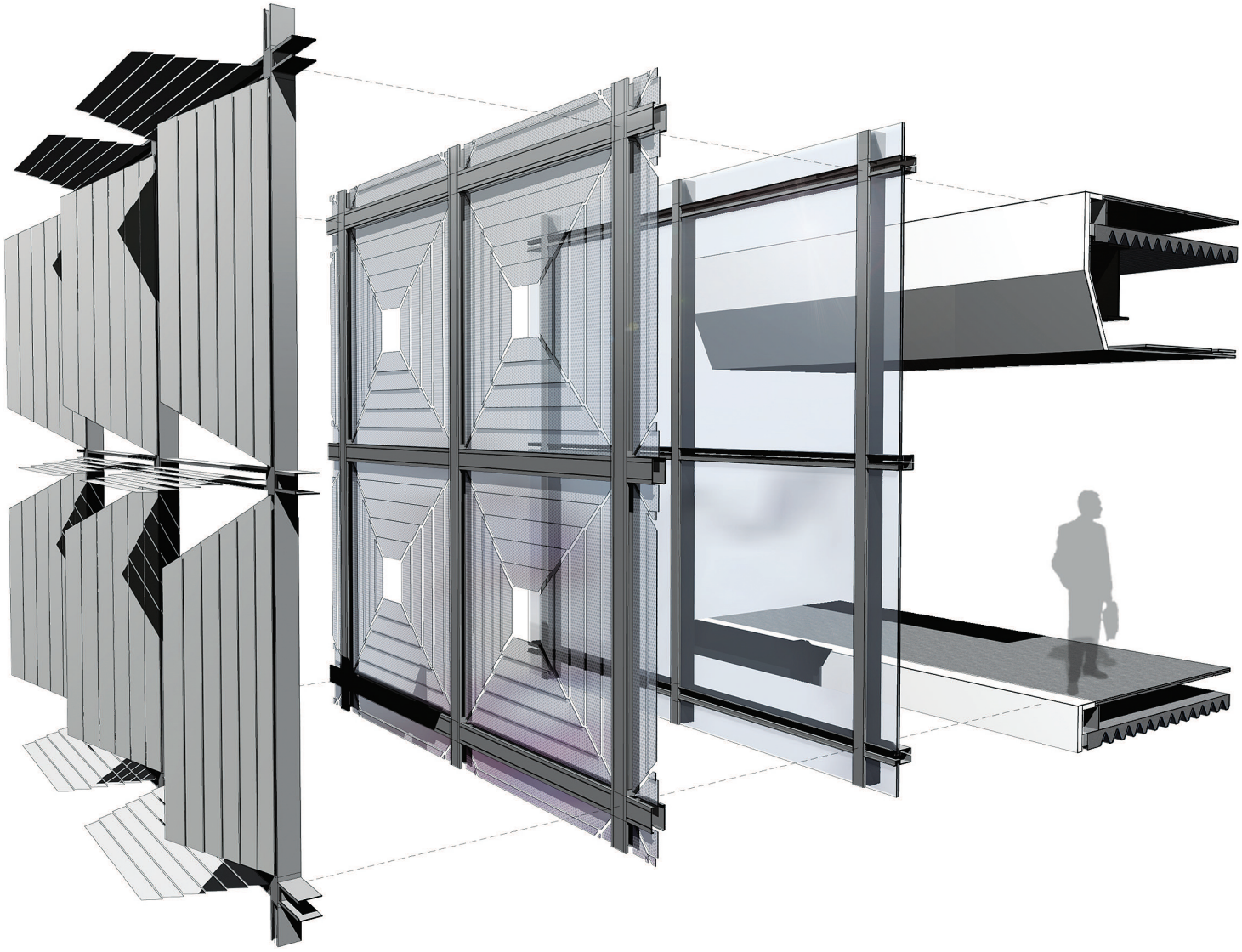


↑ Solar Analysis

The team performed extensive solar analysis of HelioTrace system components, with three goals in mind: to minimize glare, maximize daylighting, and control solar heat gain. Glare studies (top, with baseline analysis at left and optimized analysis at right) sought to determine if the shading devices could maintain an exterior-interior light contrast level of 10:1, thereby cutting glare substantially. Daylight levels (middle) were calibrated to avoid excessive illumination (middle left)—which can cause glare—and to help yield energy savings, as well as promote user comfort. Finally, the problem of high solar gain (bottom left) was studied with reference to the system's external shades (both those parallel and perpendicular to the curtain wall), which together cut the peak solar gain by an estimated 81 percent. The team's parametric analysis was even more detailed, calculating the optimal deployment level of each shading device at specific times of day, in different seasons.









← Integrated Systems

HelioTrace is composed of three systems: exterior shading (both shades that are perpendicular to the building, above far left, and shades parallel to the façade, above, second from left); a high-performance curtain wall; and complementary M/E/P and building systems. The illustrations at left show the shading devices in (from left to right) fully deployed, partially deployed, and fully retracted modes. Fully deployed, the shades control glare and cut heat gain; partially deployed, they control glare while introducing daylight; when they are fully retracted—during winter months—the system maximizes daylight and allows for passive heating.

JURY







BIOS →

Frank Barkow Barkow, with partner Regine Leibinger, founded Barkow Leibinger Architekten in Berlin in 1993 and has done work in the residential, industrial, and corporate sectors, among others. Recent projects include the conversion of an 1880s apartment block into office and gallery space in Berlin and a campus master plan for Bayer Schering Pharma. The firm won an R+D Award last year for a gatehouse on the manufacturer Trumpf's campus in Ditzingen, Germany. Barkow received a B.Arch. from Montana State University, followed by an M.Arch. from the Harvard University Graduate School of Design. He has taught at Cornell University; the University of Minnesota; the State Academy of Art and Design, Stuttgart, Germany; and the Architectural Association in London.

Jenny Wu A cofounder of the Los Angeles–based Oyler Wu Collaborative, Wu has worked on everything from a design for a tower in Taipei City, Taiwan, to a proposal for an Ordos 100 villa in the inner Mongolia region of China, to temporary bent-aluminum installations with names such as Pendulum Plane and Live Wire (see ARCHITECT, January 2009, page 29). Wu received a B.A. from Columbia University and an M.Arch. from the Harvard University Graduate School of Design. She has worked as a project architect at firms such as Architecture Research Office and Gluckman Mayner Architects. Wu teaches first-year architecture studio at the Southern California Institute of Architecture and recently published her first book, *Primitives*.

Cristobal Correa Correa is an associate principal in the New York office of Buro Happold. He was educated at the Universidad de Chile and the Massachusetts Institute of Technology, from which he received a BSCE and an MSCE, respectively. Correa joined Buro Happold in 1998 and now manages teams in the structural engineering division, dealing with, among other things, tension structures, long-span structures, and façades. Notable projects include the Crystal Bridges Museum of American Art in Bentonville, Ark.; the Arena das Dunas in Natal, Brazil; and the Roppongi Canopies in Roppongi, Japan. Correa teaches at the Pratt Institute in New York and serves as a member of the board of the Structural Engineers Association of New York.

MIKE MORGAN

AcuityBrands. | The Experience of Lighting.™



Gotham | Engineering Office, Morristown, NJ

Mark | Enterprise Community Partners, Columbia, MD | Cline Bettridge Bernstein

LIGHTING

AEL American Electric Lighting
ANTIQUE Street Lamps
CARANDINI
gotham
HOLOPHANE
HYDREL
LITHONIA LIGHTING
MARK
PEERLESS
RELOC WIRING SOLUTIONS
tersen

CONTROLS

LC LIGHTING CONTROLS
nLIGHT
ROAM
sensorswitch
SIMPLYFI LIGHTING INTELLIGENCE
Synergy LIGHTING CONTROLS

Hydrel | Lighting Design: Gary Steffy Lighting Design Inc. | Maconochie Photography

Hydrel | Sacramento Memorial Auditorium, Sacramento, CA | ©2009 Doug A. Salin | Benya Lighting Design | Edison Award Winner

FORM INNOVATION ENERGY SOLUTIONS

ACUITYBRANDS.COM

Circle no. 209 or http://architect.hotims.com